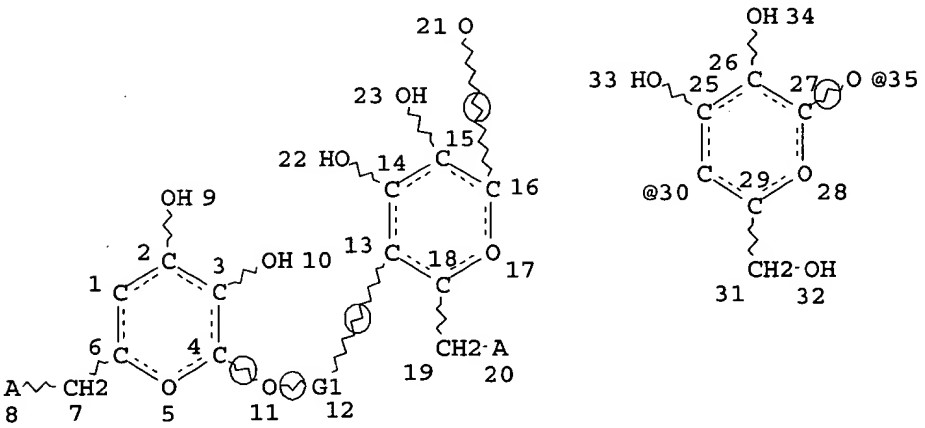
cyclode: pxn sites + text

2/B

=> d que
L4 STR



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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE
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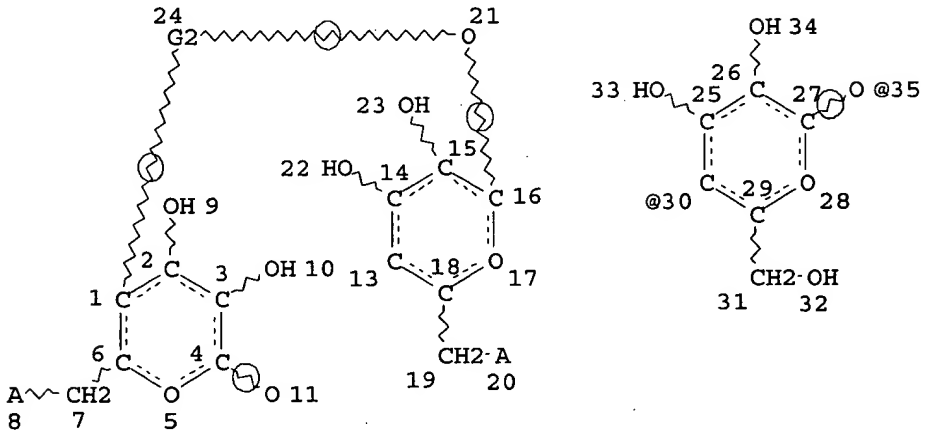
L7 STR



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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE

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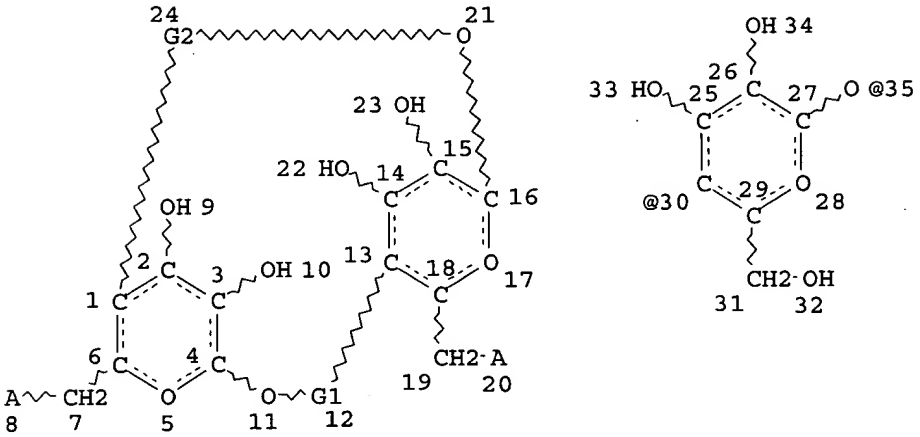

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REP G2=(2-4) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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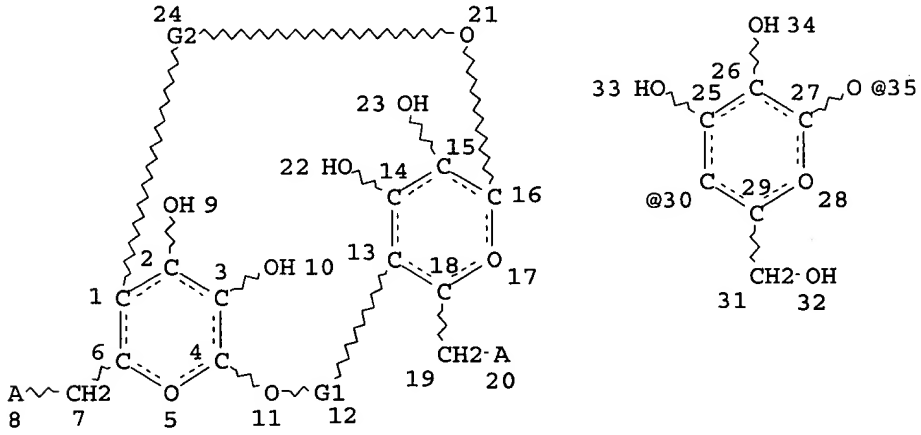
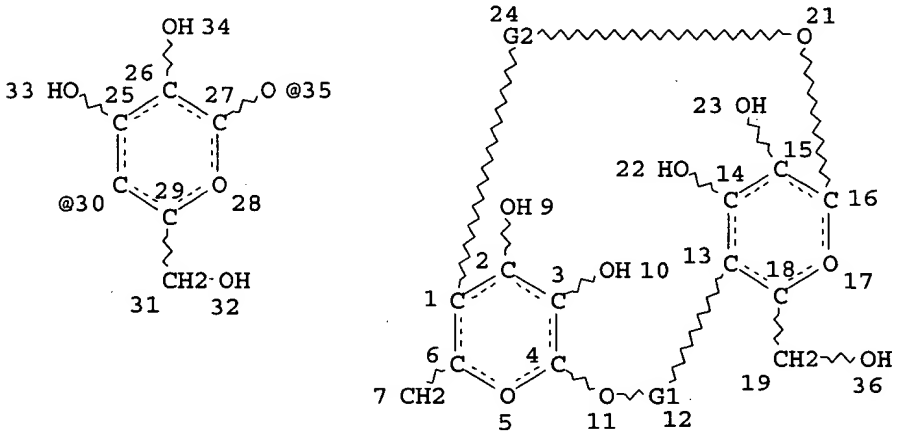
L14 STR



REP G1=(0-3) 30-11 35-13
REP G2=(5-6) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

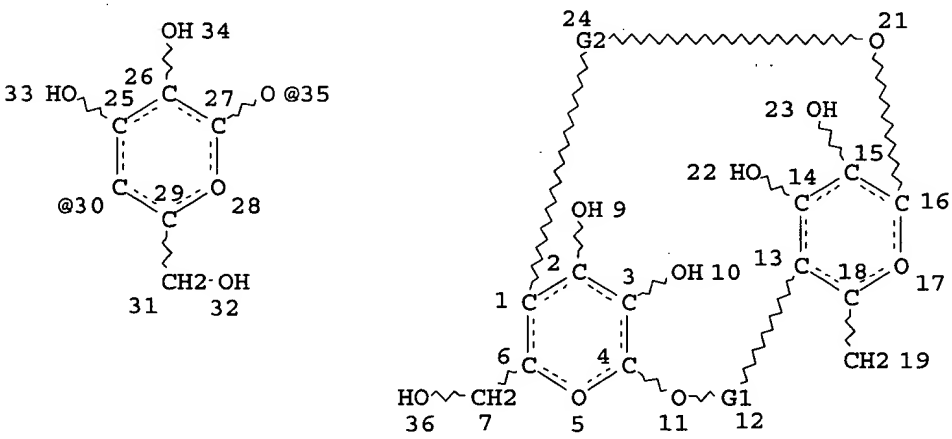
STEREO ATTRIBUTES: NONE
L15 13536 SEA FILE=REGISTRY SUB=L9 SSS FUL L14
L16 17980 SEA FILE=REGISTRY ABB=ON PLU=ON L13 OR L15
L43 STR



REP G1=(0-3) 30-11 35-13
REP G2=(2-4) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

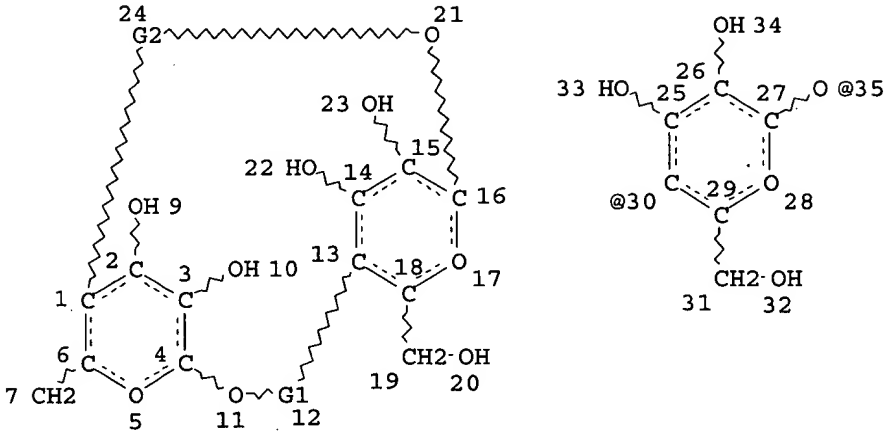
STEREO ATTRIBUTES: NONE
L44 STR



REP G1=(0-3) 30-11 35-13
REP G2=(2-4) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

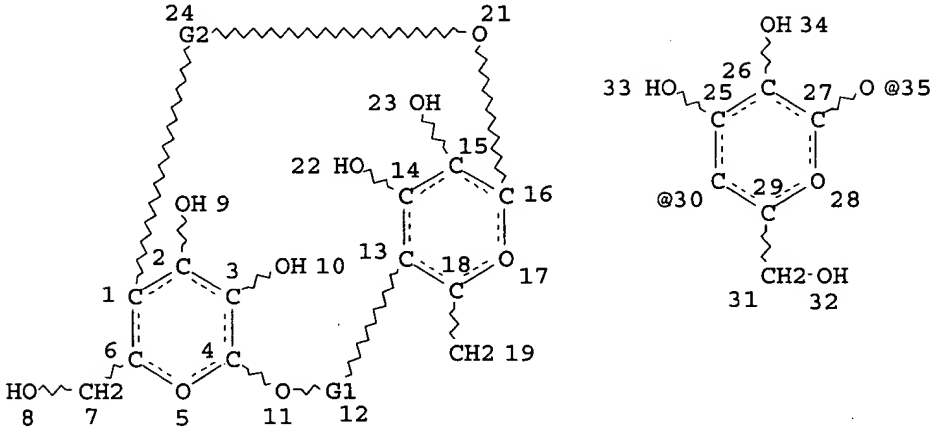
STEREO ATTRIBUTES: NONE
L45 STR



REP G1=(0-3) 30-11 35-13
REP G2=(5-6) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE
L46 STR



REP G1=(0-3) 30-11 35-13
REP G2=(5-6) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE
L47 17075 SEA FILE=REGISTRY SUB=L9 SSS FUL L43
L48 17075 SEA FILE=REGISTRY SUB=L9 SSS FUL L44
L49 13423 SEA FILE=REGISTRY SUB=L9 SSS FUL L45
L50 13423 SEA FILE=REGISTRY SUB=L9 SSS FUL L46
L51 17105 SEA FILE=REGISTRY ABB=ON PLU=ON (L47 OR L48 OR L49 OR L50)
L52 1212 SEA FILE=REGISTRY ABB=ON PLU=ON L16 NOT L51
L54 126 SEA FILE=HCAPLUS ABB=ON PLU=ON L52(L)(RACT OR RCT OR RGT)/RL

L55 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND ?POLYMER?

=> d l55 ibib abs hitind hitstr 1-14

L55 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:331929 HCAPLUS
DOCUMENT NUMBER: 140:363027
TITLE: Cyclodextrin-modified **polymer** carriers coupled to biorecognition molecules for drug delivery
INVENTOR(S): Bellocq, Nathalie C.; Davis, Mark E.; Pun, Suzie Hwang
PATENT ASSIGNEE(S): Insert Therapeutics, Inc., USA
SOURCE: PCT Int. Appl., 111 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004032862	A2	20040422	WO 2003-US31991	20031008
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004109888	A1	20040610	US 2003-681745	20031008

PRIORITY APPLN. INFO.: US 2002-417373P P 20021009
AB The application discloses cyclodextrin-modified materials for carrying drugs and other active agents, such as nucleic acids. Compns. are also disclosed of cyclodextrin-modified materials that release such active agents under controlled conditions. The invention also discloses compns. of cyclodextrin-modified **polymer** carriers that are coupled to biorecognition mols. for assisting the delivery of drugs to their site of action. A number of examples are given for preparation of cyclodextrin-PEG derivative
conjugates.
IC ICM A61K
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 33, 35
IT Polyoxyalkylenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(carboxylated, reaction products with cyclodextrins;

cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT Drug delivery systems
(carriers; cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT Inclusion compounds
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT Nucleic acids
Peptides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT Drug delivery systems
(prodrugs; cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT Platelet-derived growth factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(β, nucleic acid encoding; cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT 52-90-4, L-Cysteine, reactions 677-24-7, Methyl dichlorophosphate 2094-72-6, 1-Adamantanecarbonyl chloride 4411-25-0, 1-Adamantyl isocyanate 4942-47-6, 1-Adamantaneacetic acid 6240-11-5, 1-Adamantaneethanol 9002-98-6, Polyethylenimine 9057-02-7, Pullulan 17768-41-1, Tricyclo[3.3.1.13,7]decane-1-methanamine 25322-68-3D, carboxylated, reaction products with cyclodextrins 42503-45-7, Pentaerythritol ethoxylate 64913-54-8 **76700-72-6** 98443-27-7 129434-27-1 393781-65-2 401514-72-5 438490-98-3 681286-95-3
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT 768-94-5DP, Tricyclo[3.3.1.13,7]decan-1-amine, reaction products with carboxylated polyethylene glycol 70539-42-3P 85419-94-9P 152310-58-2P 214042-86-1P 438490-97-2P **614744-04-6P** 672333-69-6P **681286-88-4P** 681286-92-0P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT 2094-72-6DP, reaction products with pullulan 4411-25-0DP, reaction products with branched polyethylene glycol/pullulan 4942-47-6DP, Tricyclo[3.3.1.13,7]decane-1-acetic acid, reaction products with branched polyethylene glycol/polyethylenimine 9002-98-6DP, Polyethylenimine, reaction products with cyclodextrin derivs. 9002-98-6DP, reaction products with cyclodextrin tosylate 9057-02-7DP, Pullulan, reaction products with adamantyl isocyanate 98443-27-7DP, reaction products with PEI 101652-40-8DP, reaction products with carboxylated polyethylene glycol 438490-98-3DP, reaction products with RGD peptide 614744-05-7DP, reaction products with adamantylmethylamine 614744-05-7P 681286-87-3P 681286-89-5P 681286-90-8P 681286-91-9P 681286-93-1P 681286-94-2P 681286-96-4P 681286-97-5P 681286-98-6P 681286-99-7P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

IT **76700-72-6**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**

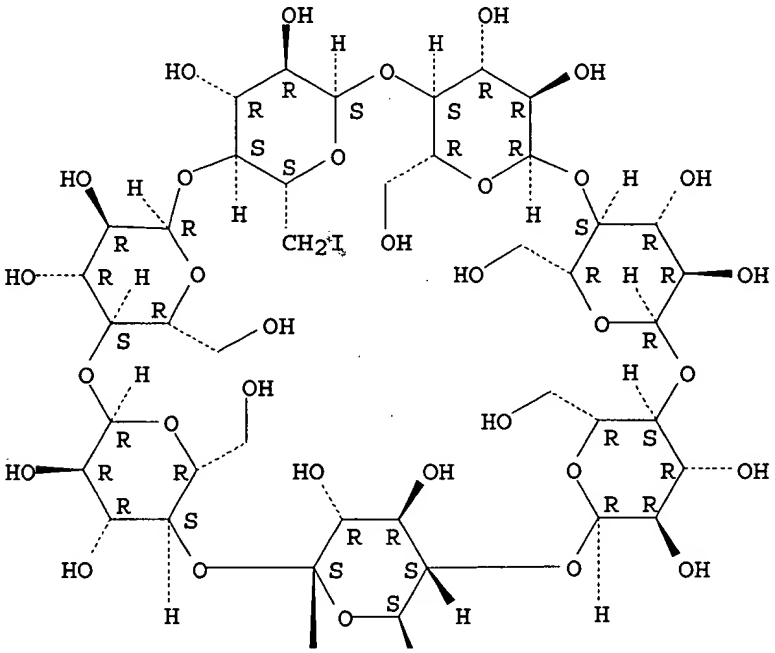
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

RN 76700-72-6 HCAPLUS

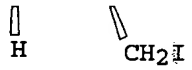
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



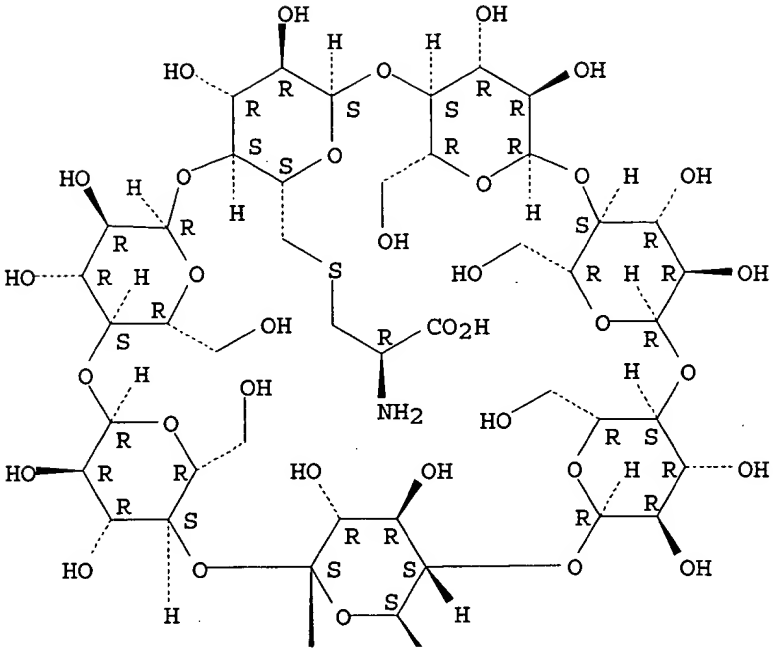
IT **614744-04-6P 681286-88-4P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(cyclodextrin-modified **polymer** carriers coupled to biorecognition mols. for drug delivery)

RN 614744-04-6 HCAPLUS

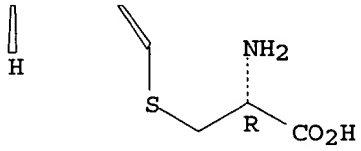
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



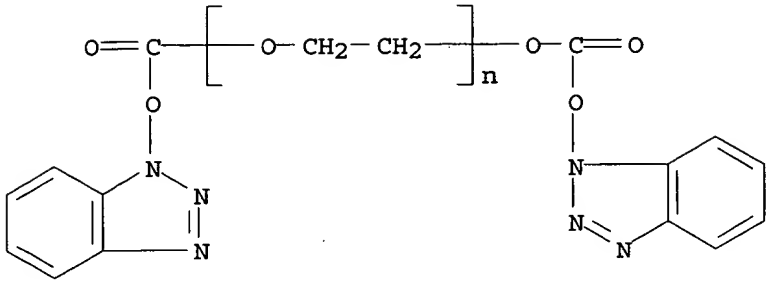
PAGE 2-A



RN 681286-88-4 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, polymer with α-[(1H-benzotriazol-1-yloxy)carbonyl]-ω-[[(1H-benzotriazol-1-yloxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 178676-34-1
CMF (C2 H4 O)n C14 H8 N6 O5
CCI PMS

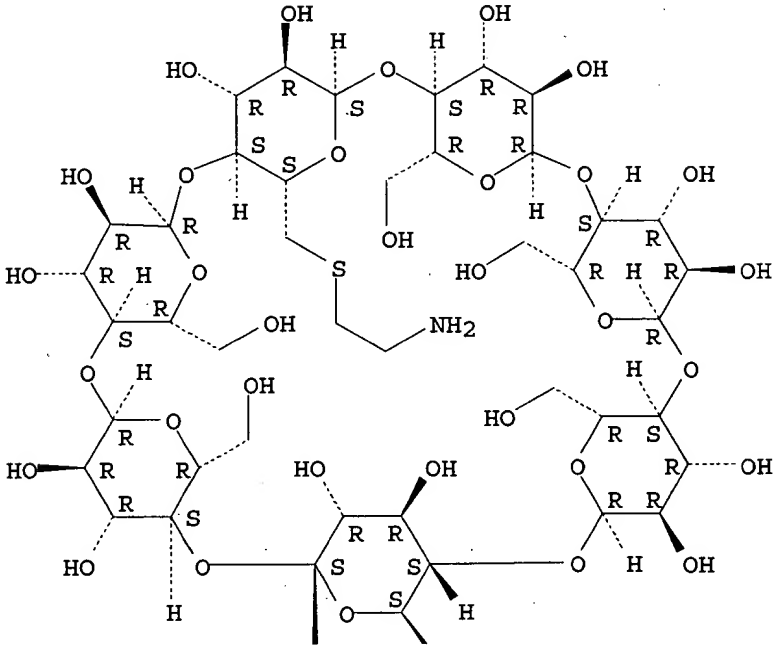


CM 2

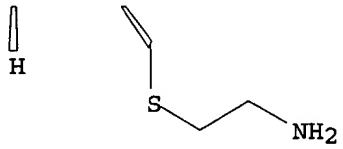
CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



L55 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:220231 HCAPLUS
DOCUMENT NUMBER: 140:276173
TITLE: Cyclodextrin-based **polymers** for therapeutics delivery
INVENTOR(S): Cheng, Jianjun; Davis, Mark E.; Khin, Kay T.
PATENT ASSIGNEE(S): Insert Therapeutics, Inc., USA
SOURCE: PCT Int. Appl., 159 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004022099	A2	20040318	WO 2003-US27588	20030904
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004077595	A1	20040422	US 2003-656838	20030905

PRIORITY APPLN. INFO.:
US 2002-408855P P 20020906
US 2002-422830P P 20021031
US 2003-451998P P 20030304

AB The present invention relates to novel compns. of therapeutic cyclodextrin-containing **polymeric** compds. designed as a carrier for delivery of small mol. therapeutics and pharmaceutical compns. thereof. These cyclodextrin-containing **polymers** improve drug stability and solubility, and reduce toxicity of the small mol. therapeutics when used in vivo. Furthermore, by selecting from a variety of linker groups and targeting ligands the **polymers** present methods for controlled delivery of the therapeutic agents. The invention also relates to methods of treating subjects with the therapeutic compns. described herein. The invention further relates to methods for conducting pharmaceutical business comprising manufacturing, licensing, or distribution kits containing or
relating to the **polymeric** compds. described herein.

IC ICM A61K047-00
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 35
ST cyclodextrin **polymer** carrier drug delivery; controlled drug delivery cyclodextrin **polymer** carrier
IT Receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(agonists and antagonists; cyclodextrin-based **polymer** carriers for therapeutics delivery)
IT Drug delivery systems
(carriers; cyclodextrin-based **polymer** carriers for therapeutics delivery)
IT Drug delivery systems
(controlled-release; cyclodextrin-based **polymer** carriers for

therapeutics delivery)

IT Antitumor agents
(cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT Drug delivery systems
(kits; cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT Polyoxyalkylenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT Peptides, biological studies
Polymers, biological studies
Proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(therapeutic; cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 152310-58-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(crosslinking agent; preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 204133-74-4DP, conjugates with ethoxylated polycyclodextrins
362496-98-8DP, conjugates with ethoxylated polycyclodextrins
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT **672333-68-5P**
RL: PKT (Pharmacokinetics); **RCT (Reactant)**; SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 672333-68-5DP, amides with glycine camptothecin ester
RL: PKT (Pharmacokinetics); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 7689-03-4, Camptothecin
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 204133-74-4P 362496-98-8P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 52-90-4, L-Cysteine, reactions 56-89-3, Cystine, reactions 60-23-1, Cysteamine 68-11-1, Mercaptoacetic acid, reactions 98-59-9, Tosyl chloride 405-39-0 677-24-7, Methyl dichlorophosphate 768-94-5, 1-Aminoadamantane 929-59-9 1155-64-2 1676-73-9 3406-84-6, Biphenyl-4,4'-disulfonyl chloride 4530-20-5 6066-82-6, N-Hydroxysuccinimide 6240-11-5, 1-Adamantane ethanol 7585-39-9, β-Cyclodextrin 9002-98-6, PEI 10389-65-8 17768-41-1, 1-Adamantane methylamine 21160-83-8 23911-25-3, Ethylenediamine tetraacetic dianhydride 23911-26-4, Diethylenetriamine pentaacetic dianhydride 25322-68-3, Polyethylene glycol 28320-73-2 29390-67-8

51974-68-6, Sodium 2-aminoethylthiolate 488085-18-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 108-30-5P, Succinic anhydride, preparation 16352-26-4P 29390-66-7P, 6-Iodo β-Cyclodextrin 67217-55-4P, β-Cyclodextrin 6-tosylate 73499-21-5P 73667-73-9P **76700-72-6P** 85419-94-9P **101652-40-8P** 120527-66-4DP, cyclodextrinamide derivs., camptothecin conjugates 153445-05-7P 204133-72-2P 362496-95-5P **614744-04-6P 614744-05-7P 614744-06-8P 614744-08-0P 614744-10-4P 672333-40-3P 672333-43-6P 672333-45-8P** 672333-47-0P 672333-50-5P 672333-51-6P 672333-52-7P 672333-53-8P 672333-54-9P **672333-55-0P 672333-57-2P** 672333-60-7P **672333-61-8P 672333-64-1P 672333-65-2P** 672333-69-6P 672333-70-9P 672333-72-1P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT 1397-89-3DP, Amphotericin B, conjugates with ethoxylated polycyclodextrins 9002-98-6DP, cyclodextrin derivs., camptothecin conjugates 25513-46-6DP, cyclodextrinamide derivs., camptothecin conjugates 29390-67-8DP, reaction products with polyphosphoesters, camptothecin conjugates 106973-21-1DP, cyclodextrinamide derivs., camptothecin conjugates 176669-13-9DP, reaction products with polyglutamic acid, cyclodextrinamide derivs. 204133-36-8DP, conjugates with ethoxylated polycyclodextrins 215604-12-9DP, conjugates with ethoxylated polycyclodextrins 362496-97-7DP, reaction products with ethylene-maleic anhydride **polymers**, cyclodextrinamide derivs. 672333-53-8DP, conjugates with ethoxylated polycyclodextrins 672333-55-0DP, conjugates with glycine camptothecin ester 672333-57-2DP, conjugates with glycine camptothecin ester 672333-60-7DP, conjugates with glycine camptothecin ester 672333-61-8DP, conjugates with glycine camptothecin ester 672333-62-9P 672333-65-2DP, amides with N-(3-carboxy1-1-oxopropyl)glycine camptothecin ester 672333-66-3P 672333-67-4P 672333-69-6DP, **polymers** with cyclodextrinamide derivs., camptothecin conjugates 672333-71-0P 672913-15-4DP, amides with glycine camptothecin ester and NHS folate derivative 672932-77-3DP, camptothecin conjugates 672932-77-3P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

IT **672333-68-5P**
RL: PKT (Pharmacokinetics); **RCT (Reactant)**; SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

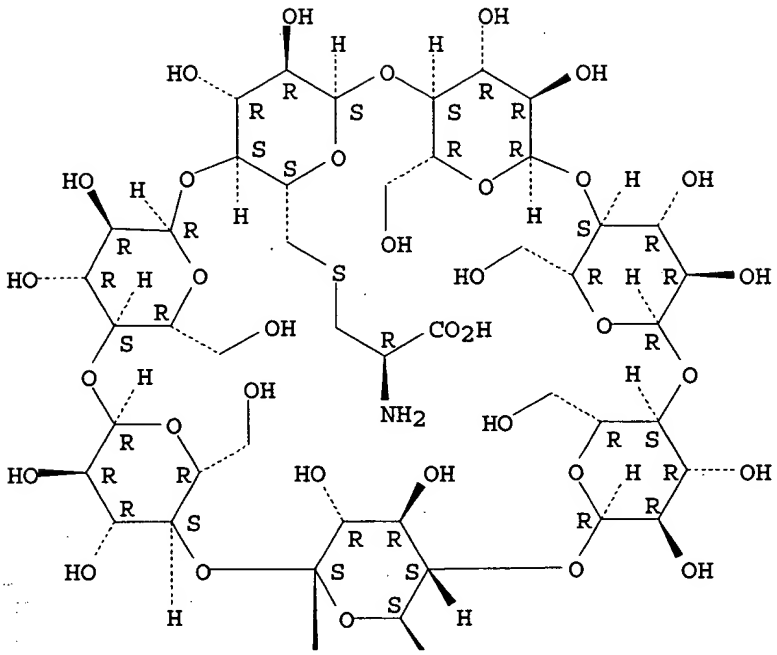
RN 672333-68-5 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-(3-carboxy-1-oxopropyl)-ω-(3-carboxy-1-oxopropoxy)poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

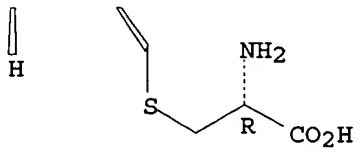
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A

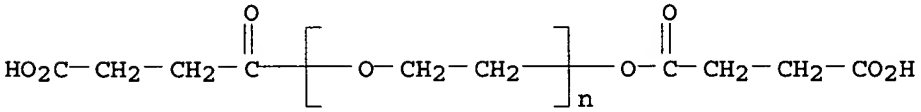


PAGE 2-A



CM 2

CRN 37684-51-8
CMF (C2 H4 O)n C8 H10 O7
CCI PMS



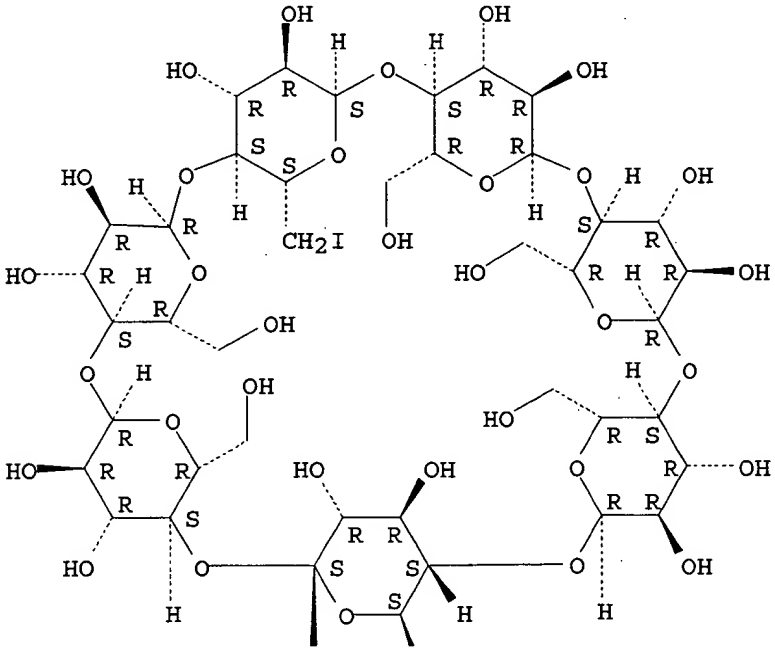
IT **76700-72-6P 101652-40-8P 614744-04-6P**
614744-05-7P 614744-06-8P 614744-08-0P
614744-10-4P 672333-40-3P 672333-43-6P
672333-45-8P 672333-55-0P 672333-57-2P

672333-61-8P 672333-64-1P 672333-65-2P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of cyclodextrin-based **polymer** carriers for therapeutics delivery)

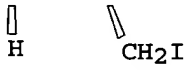
RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



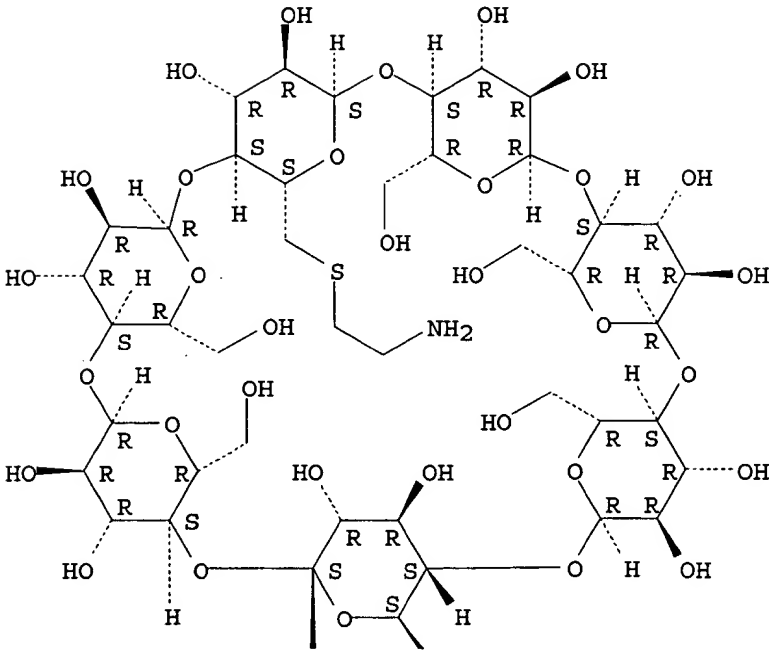
PAGE 2-A



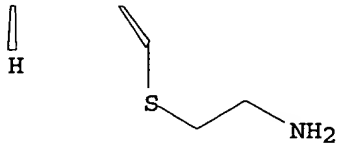
RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



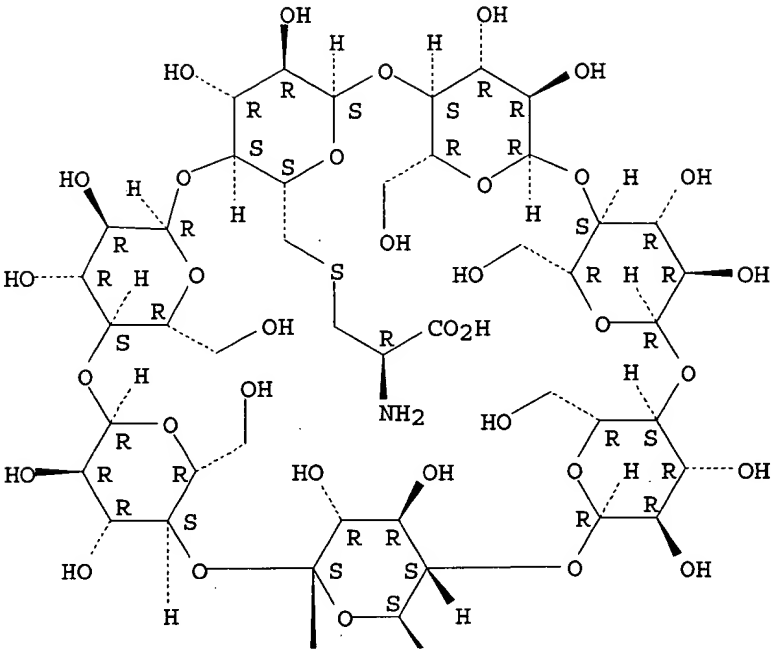
PAGE 2-A



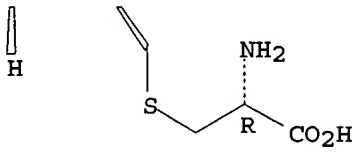
RN 614744-04-6 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



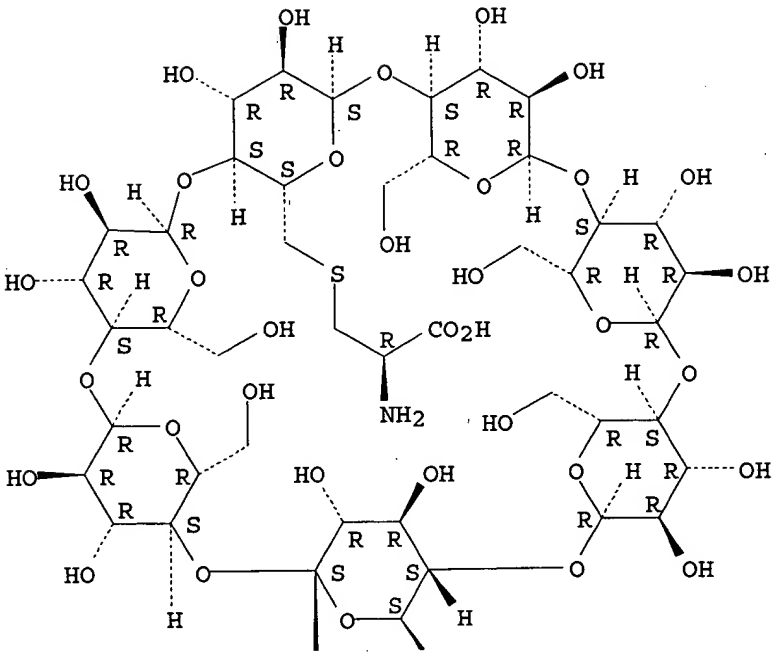
RN 614744-05-7 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-ω-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropoxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

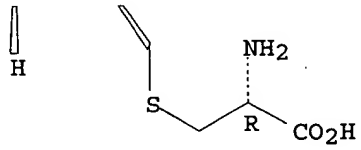
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A



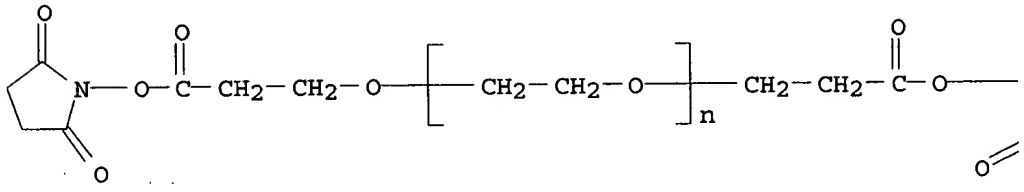
PAGE 2-A



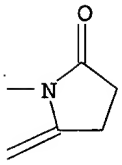
CM 2

CRN 123502-57-8
CMF (C2 H4 O)n C14 H16 N2 O9
CCI PMS

PAGE 1-A



PAGE 1-B



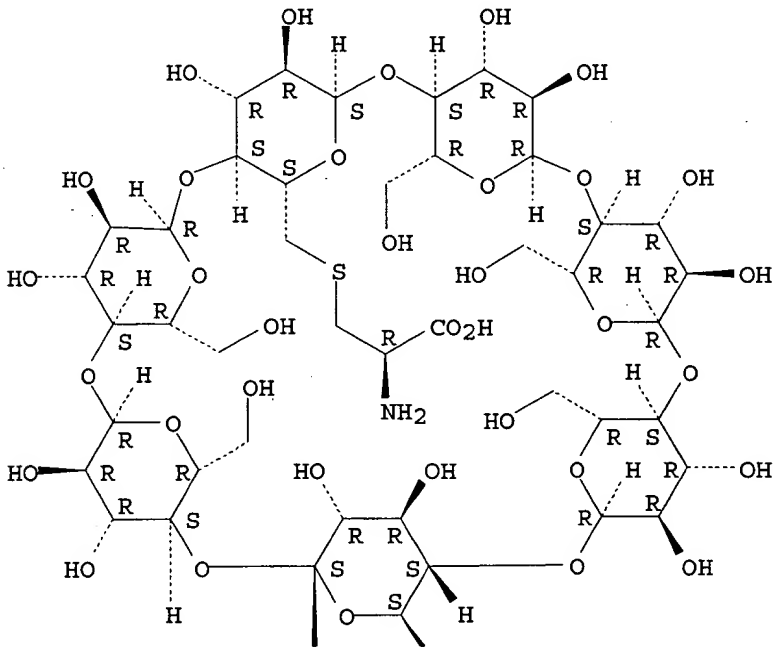
RN 614744-06-8 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-ω-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutoxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

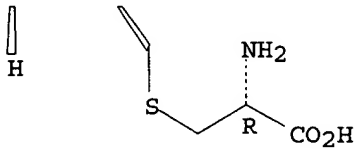
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A

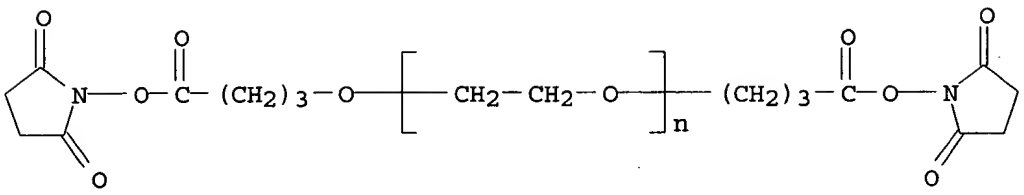


PAGE 2-A



CM 2

CRN 159194-63-5
CMF (C2 H4 O)n C16 H20 N2 O9
CCI PMS



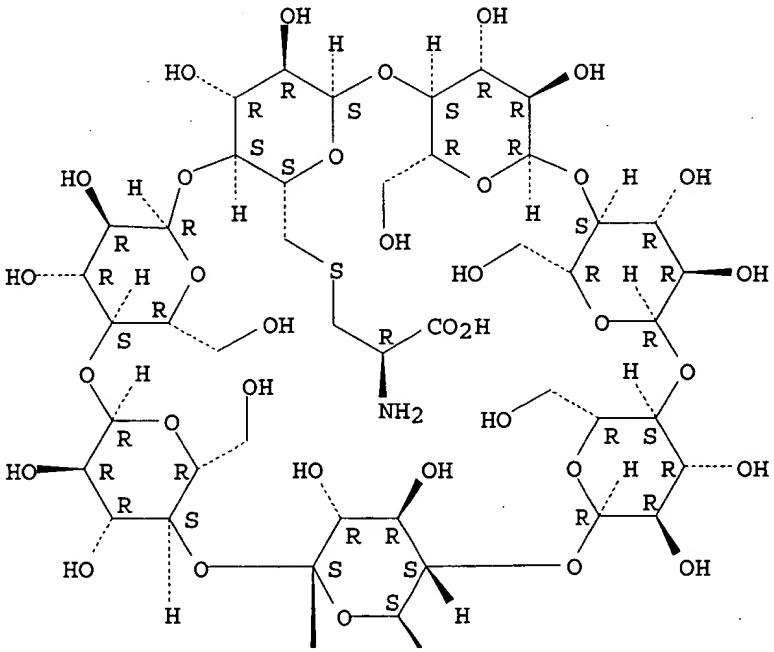
RN 614744-08-0 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[(1H-benzotriazol-1-yloxy)carbonyl]-ω-[[(1H-benzotriazol-1-yloxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

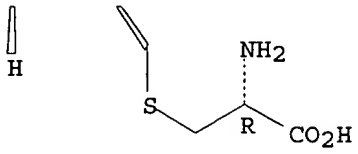
CM 1

CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

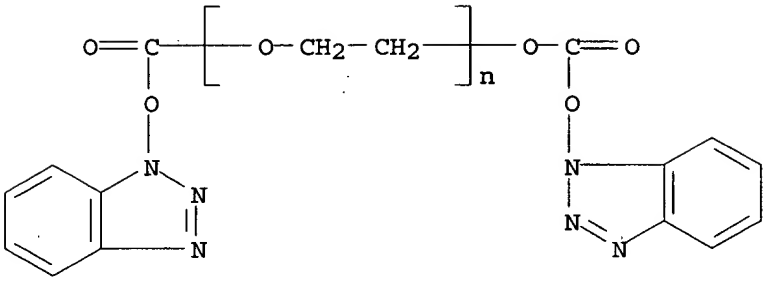
PAGE 1-A





CM 2

CRN 178676-34-1
CMF (C2 H4 O)n C14 H8 N6 O5
CCI PMS



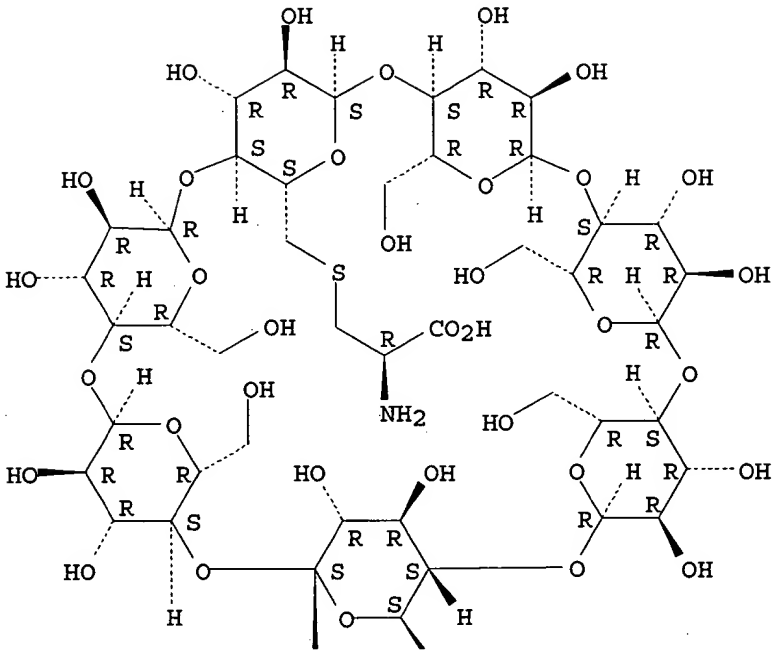
RN 614744-10-4 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[(4-nitrophenoxy)carbonyl]-ω-[[(4-nitrophenoxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

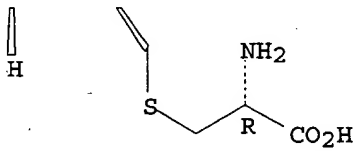
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A

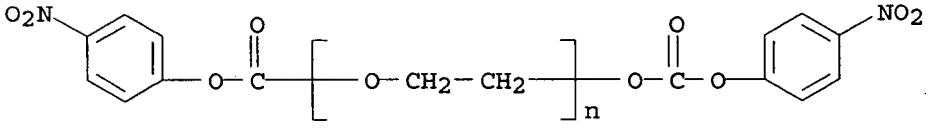


PAGE 2-A



CM 2

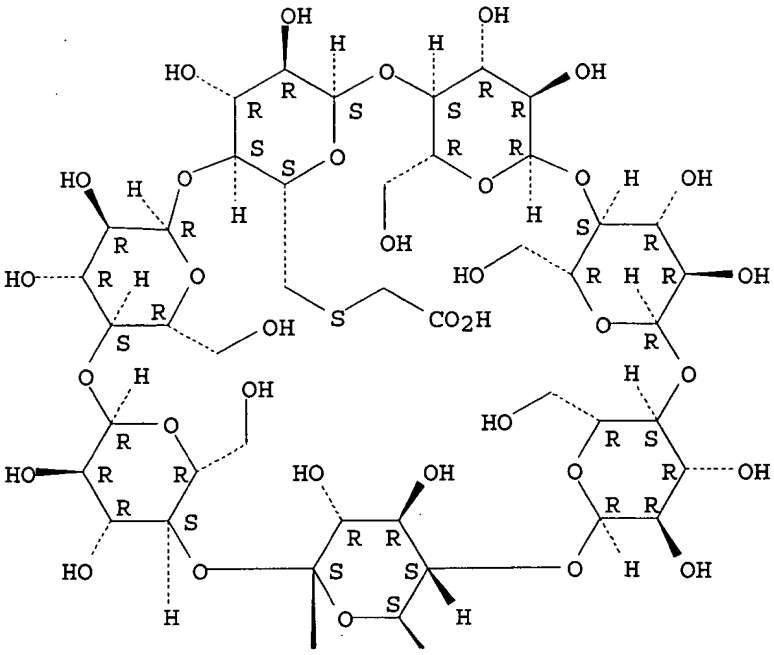
CRN 150673-50-0
CMF (C2 H4 O)n C14 H8 N2 O9
CCI PMS



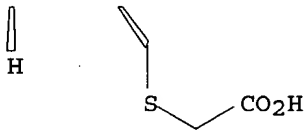
RN 672333-40-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(carboxymethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



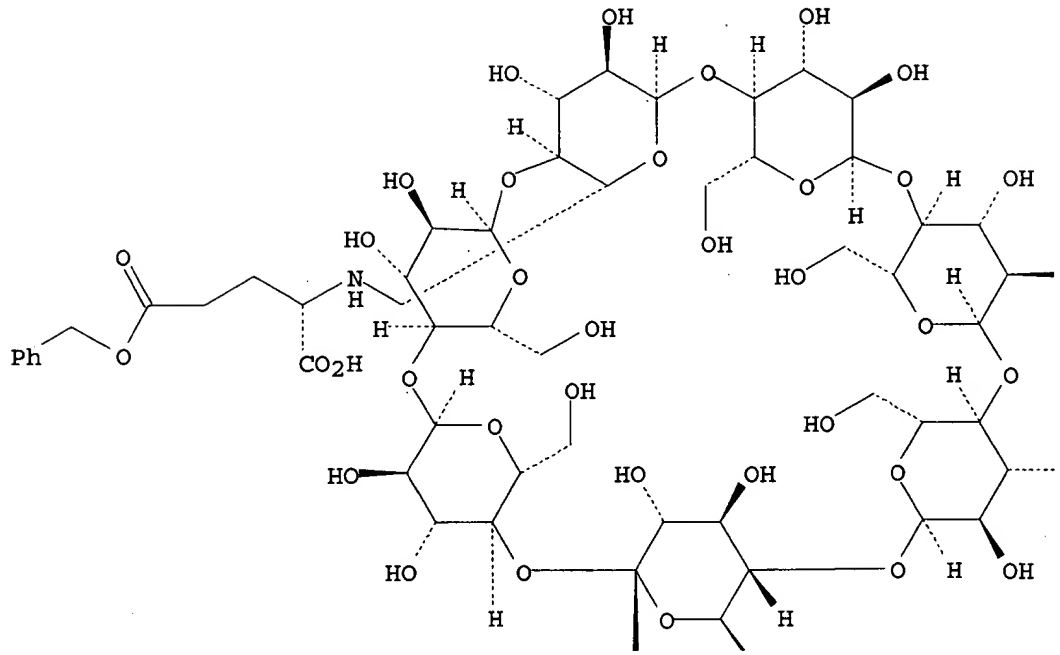
PAGE 2-A



RN 672333-43-6 HCAPLUS
CN L-Glutamic acid, N,N'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, 5,5'-bis(phenylmethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

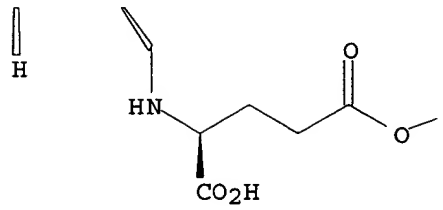


PAGE 1-B

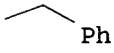
OH

OH

PAGE 2-A



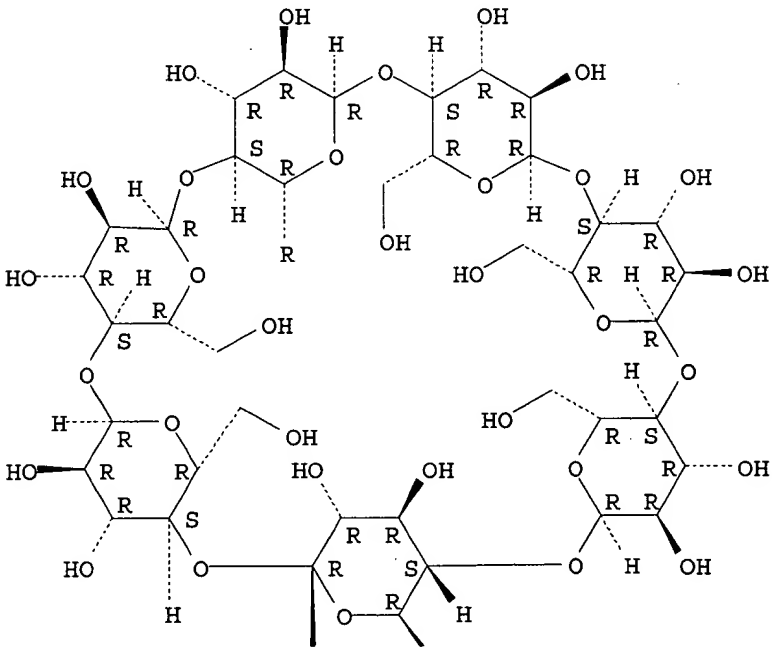
PAGE 2-B



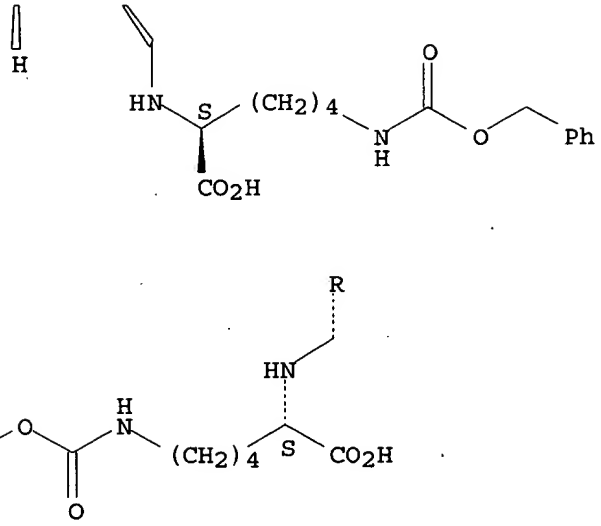
RN 672333-45-8 HCAPLUS
CN L-Lysine, N2,N2'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis[N6-[(phenylmethoxy)carbonyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



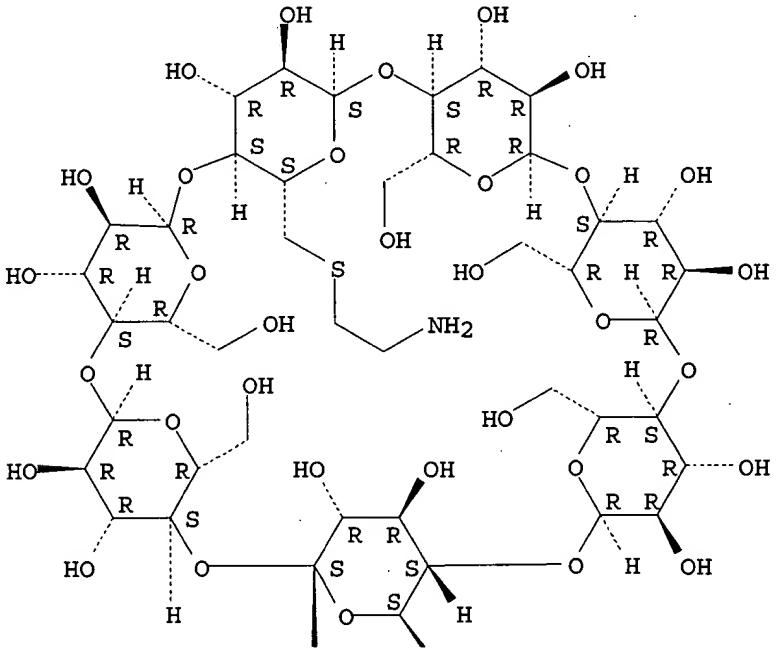
RN 672333-55-0 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, polymer with 4,4'-(1,2-ethanediyl)bis[2,6-morpholinedione] (9CI) (CA INDEX NAME)

CM 1

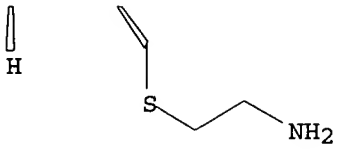
CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A

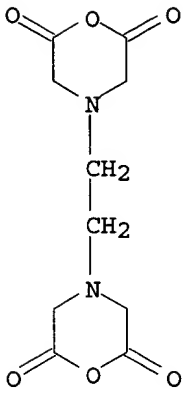


PAGE 2-A



CM 2

CRN 23911-25-3
CMF C10 H12 N2 O6



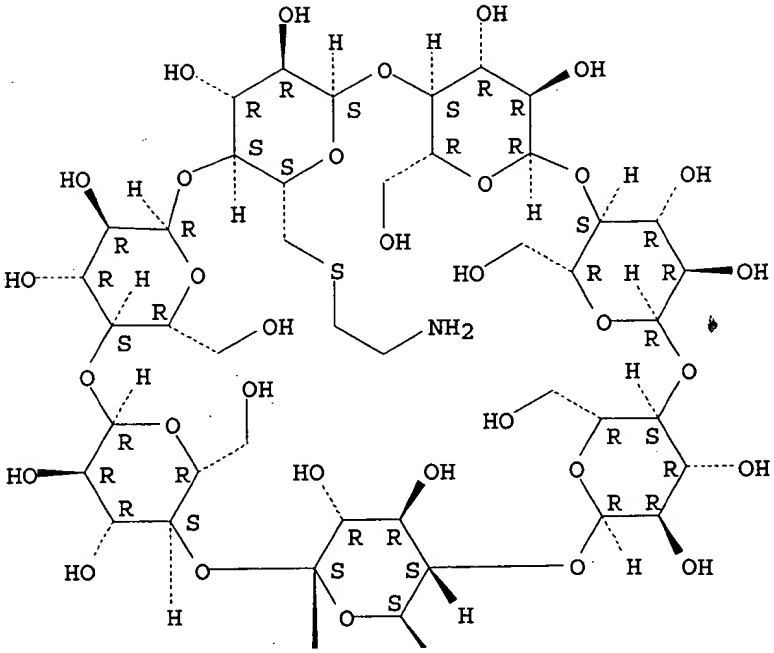
RN 672333-57-2 HCAPLUS
CN Glycine, N,N-bis[2-(2,6-dioxo-4-morpholinyl)ethyl]-, polymer with 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-β-cyclodextrin (9CI) (CA INDEX NAME)

CM 1

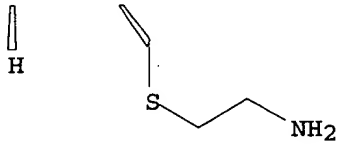
CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A

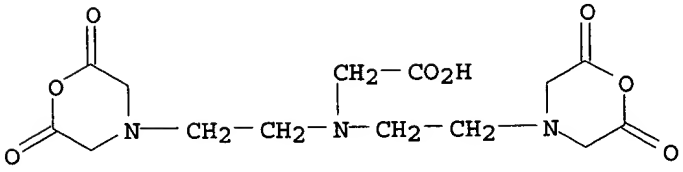


PAGE 2-A



CM 2

CRN 23911-26-4
CMF C14 H19 N3 O8



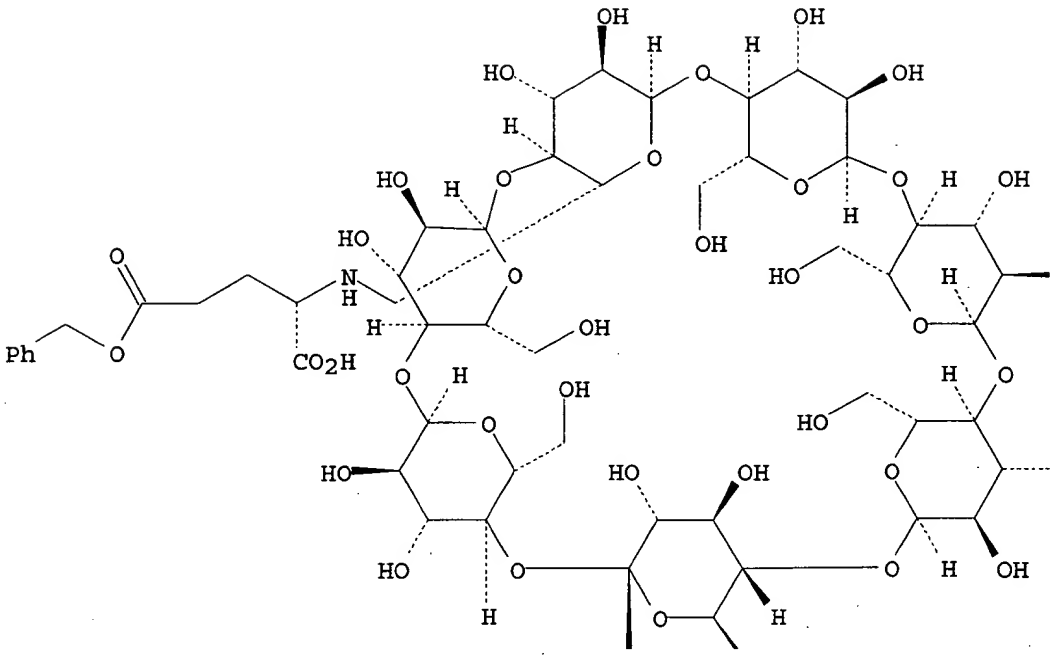
RN 672333-61-8 HCAPLUS
CN L-Glutamic acid, N,N'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, 5,5'-bis(phenylmethyl) ester, polymer with 2,2'-[1,2-ethanediylbis(oxy)]bis[ethanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 672333-43-6
CMF C66 H96 N2 O41

Absolute stereochemistry.

PAGE 1-A

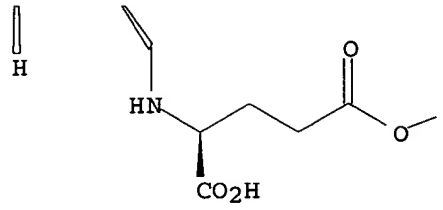


PAGE 1-B

OH

OH

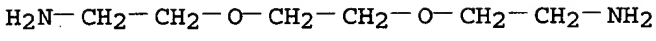
PAGE 2-A



PAGE 2-B

CM 2

CRN 929-59-9
CMF C6 H16 N2 O2



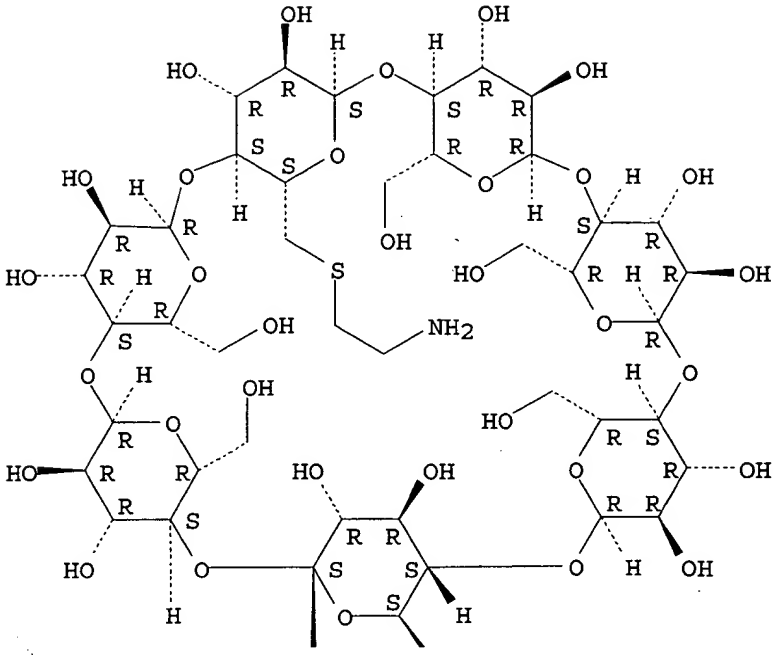
RN 672333-64-1 HCAPLUS
CN L-Cystine, N,N'-bis[(1,1-dimethylethoxy)carbonyl]-, polymer with 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-β-cyclodextrin (9CI) (CA INDEX NAME)

CM 1

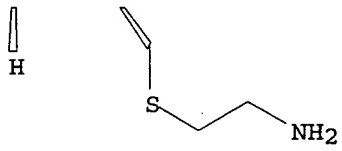
CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



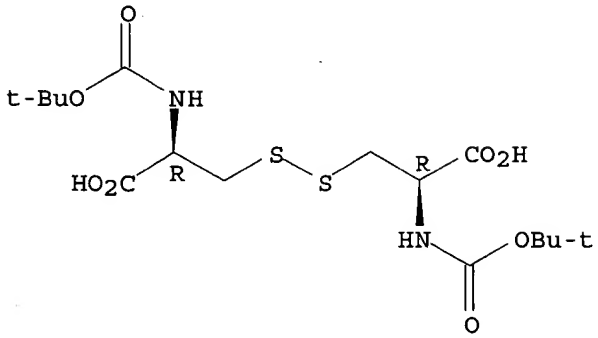
PAGE 2-A



CM 2

CRN 10389-65-8
CMF C16 H28 N2 O8 S2

Absolute stereochemistry.



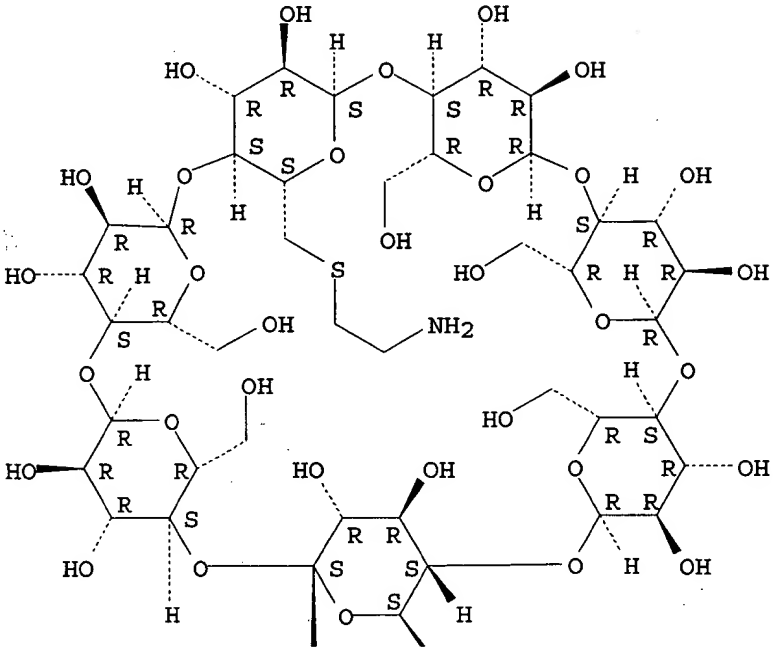
RN 672333-65-2 HCAPLUS
CN L-Cystine, polymer with 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-β-cyclodextrin (9CI) (CA INDEX NAME)

CM 1

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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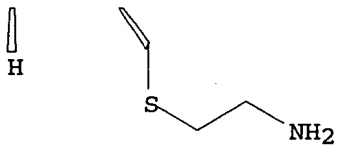
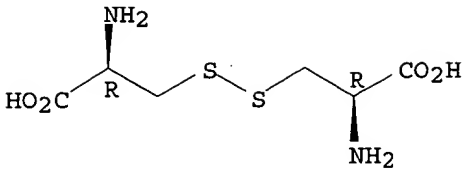


CM 2

CRN 56-89-3
CMF C6 H12 N2 O4 S2

Absolute stereochemistry.



L55 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:666072 HCAPLUS
DOCUMENT NUMBER: 139:328131
TITLE: Synthesis of Linear, β-Cyclodextrin-Based **Polymers** and Their Camptothecin Conjugates
AUTHOR(S): Cheng, Jianjun; Khin, Kay T.; Jensen, Gregory S.; Liu, Aijie; Davis, Mark E.
CORPORATE SOURCE: Insert Therapeutics, Inc., Pasadena, CA, 91107, USA
SOURCE: Bioconjugate Chemistry (2003), 14(5), 1007-1017
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 6A,6D-Bis-(2-amino-2-carboxylethylthio)-6A,6D-dideoxy-β-cyclodextrin 1, a diamino acid derivative of β-cyclodextrin, is synthesized and condensed with difunctionalized PEG comonomers to give linear, high mol. weight (Mw over 50 kDa) β-cyclodextrin-based **polymers** (2-4) with pendant functionality (carboxylate). 2-4 Are all highly soluble in aqueous solns. (over 200 mg/mL). 20-O-trifluoroglycinylcamptothecin, 5a, and 20-O-trifluoroglycinylglycinylglycinylcamptothecin, 5b, are synthesized and conjugated to 2 to give **polymer**-camptothecin (CPT) prodrugs. The solubility of CPT is increased by more than three orders of magnitude when it is conjugated to 2. The rates of CPT release from the conjugates HGGG6 (high mol. weight **polymer** (Mw 97 kDa), glyglygly linker and 6 wt % CPT loading) and HG6 (high MW **polymer** (Mw 97 kDa), gly linker and 6 wt % CPT loading) in either mouse or human plasma are dramatically accelerated over the rates of pure hydrolysis at pH = 7.4, indicating the presence of enzymic cleavage as a rate-determining step at this pH in the release of the CPT. The pH of aqueous solution has a large effect on hydrolysis rate of CPT from HGGG6 and HG6; the lower the pH, the slower the rate in the range at 4.1 ≤ pH ≤ 13.1. The IC50's of **polymer** 2e, CPT, and the CPT conjugates HG6 and HGGG6 are found to be cell-line dependent with LS174T, HT29, A2780, and PC3 cells using in vitro MTT assays. The parent **polymer** 2e has very low toxicity to all cultured cells tested.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 35
ST camptothecin cyclodextrin PEG **copolymer** prodrug release
IT Human
(A2780 cell line; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)
IT Animal cell line
(HT-29; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)
IT Animal cell line
(LS174T; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)
IT Animal cell line

(PC-3; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Polyoxyalkylenes, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Polyamides, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyoxyalkylene-; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Drug delivery systems
(prodrugs; synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Antitumor agents
Dissolution
Hydrolysis
Stability
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT 204133-74-4DP, reaction products with cyclodextrin polyamides
362496-98-8DP, reaction products with cyclodextrin polyamides
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT 7689-03-4, 20(S)-Camptothecin
RL: PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT **614744-05-7DP**, camptothecin conjugate derivs. **614744-06-8P 614744-08-0P 614744-10-4P**
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT 52-90-4, L-Cysteine, reactions 4530-20-5 28320-73-2 34079-22-6 123502-57-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT **76700-72-6P** 204133-74-4P 362496-98-8P **614744-04-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT **614744-05-7DP**, camptothecin conjugate derivs. **614744-06-8P 614744-08-0P 614744-10-4P**
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

RN 614744-05-7 HCAPLUS

CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-ω-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropoxy]poly(oxy-1,2-

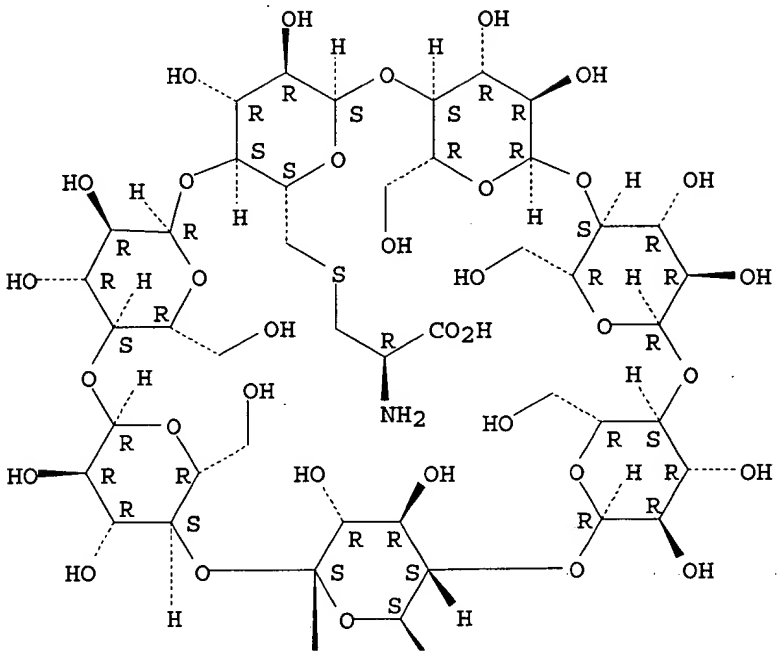
ethanediyl) (9CI) (CA INDEX NAME)

CM 1

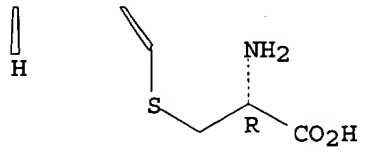
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A



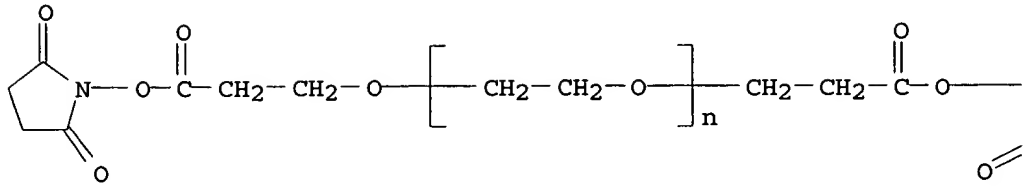
PAGE 2-A



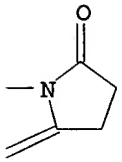
CM 2

CRN 123502-57-8
CMF (C2 H4 O)n C14 H16 N2 O9
CCI PMS

PAGE 1-A



PAGE 1-B



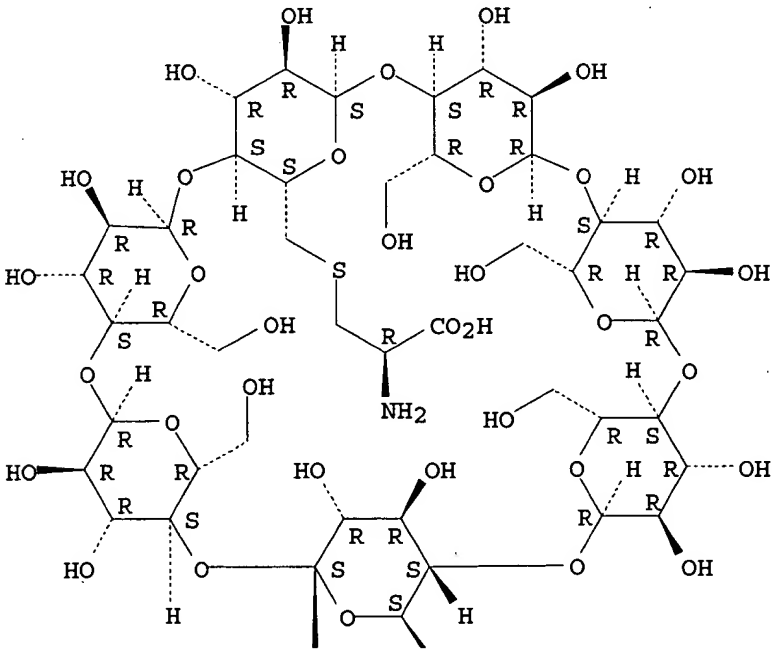
RN 614744-06-8 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-ω-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutoxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

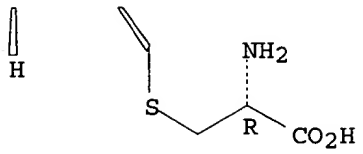
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A

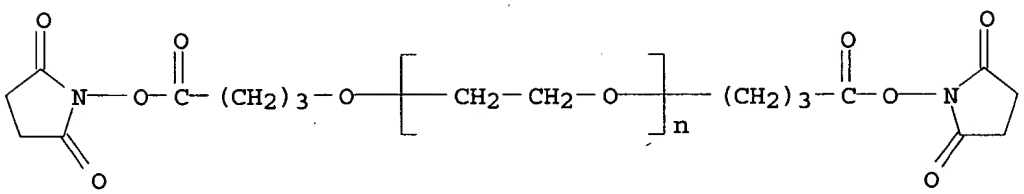


PAGE 2-A



CM 2

CRN 159194-63-5
CMF (C2 H4 O)n C16 H20 N2 O9
CCI PMS



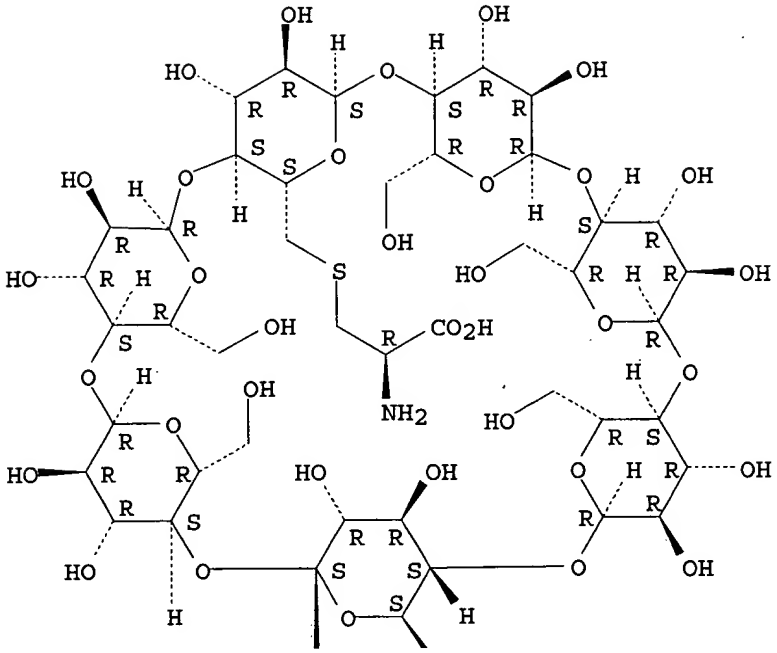
RN 614744-08-0 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[(1H-benzotriazol-1-yloxy)carbonyl]-ω-[[(1H-benzotriazol-1-yloxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A



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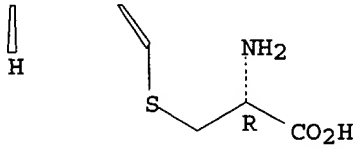
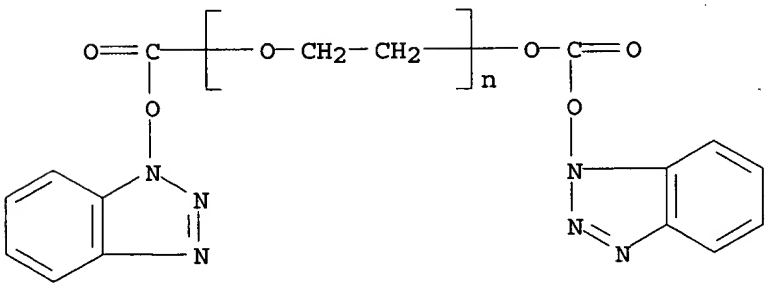


CM 2

CRN 178676-34-1
CMF (C2 H4 O)n C14 H8 N6 O5
CCI PMS



RN 614744-10-4 HCAPLUS

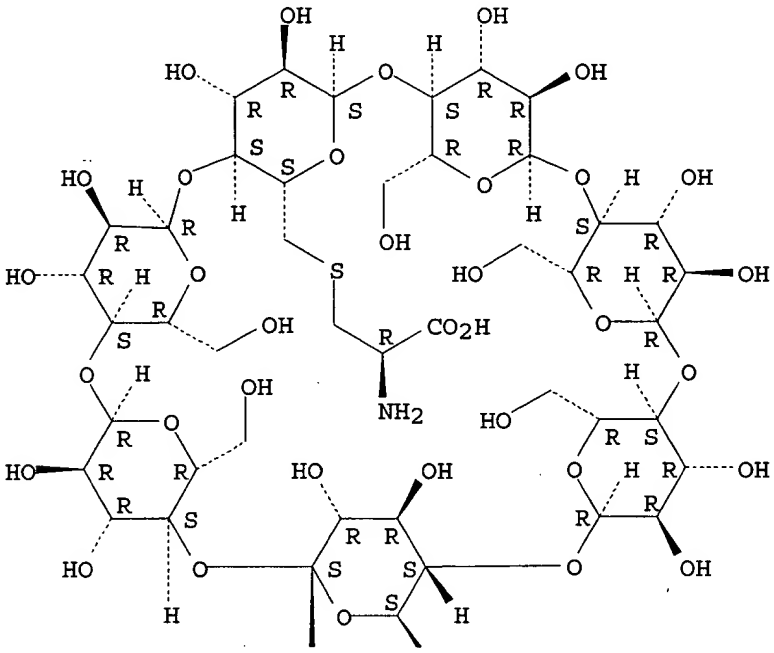
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[(4-nitrophenoxy)carbonyl]-ω-[[(4-nitrophenoxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A



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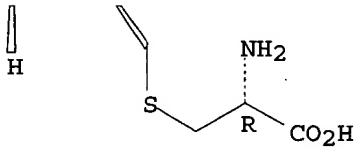
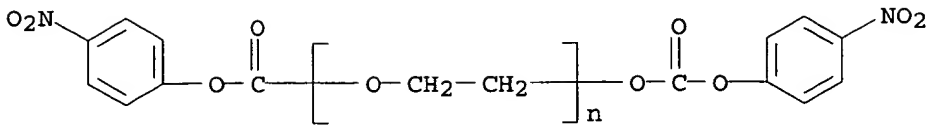


CM 2

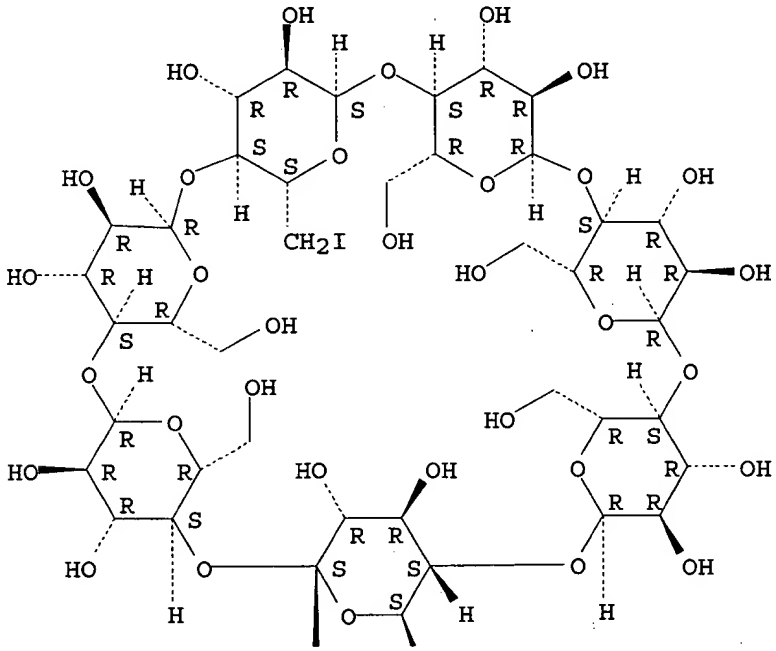
CRN 150673-50-0
CMF (C2 H4 O)n C14 H8 N2 O9
CCI PMS



IT **76700-72-6P 614744-04-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of linear, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)
RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

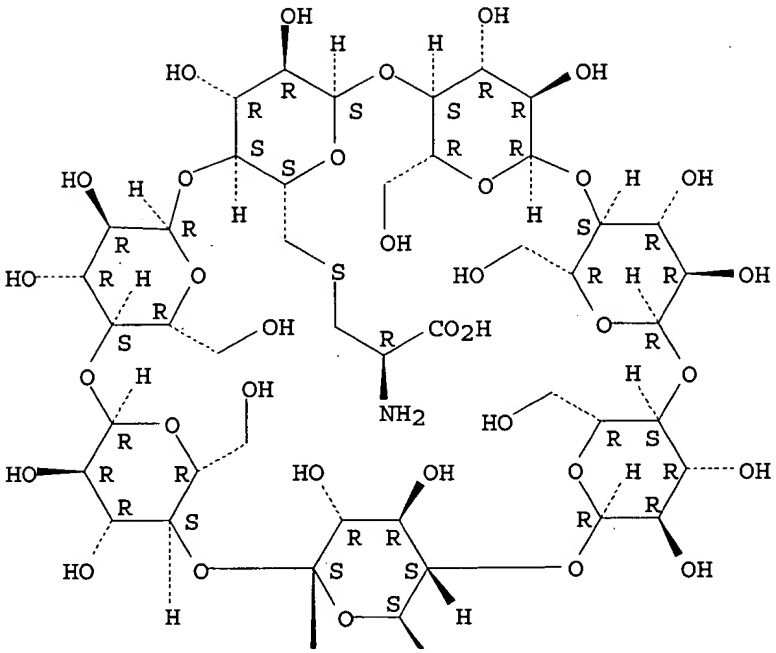


PAGE 2-A

RN 614744-04-6 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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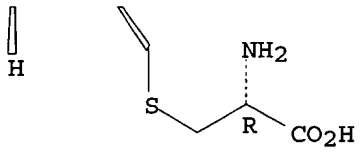


REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:965257 HCAPLUS
DOCUMENT NUMBER: 138:175678
TITLE: Structural Effects of Carbohydrate-Containing Polycations on Gene Delivery. 1. Carbohydrate Size and Its Distance from Charge Centers
AUTHOR(S): Reineke, Theresa M.; Davis, Mark E.
CORPORATE SOURCE: Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA
SOURCE: Bioconjugate Chemistry (2003), 14(1), 247-254
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cationic **polymers** have the ability to bind plasmid DNA (pDNA) through electrostatic interactions and condense it into particles that can be readily endocytosed by cultured cells. The effects that polycation

structure has on toxicity and gene delivery efficiency are investigated here by synthesizing a series of amidine-based polycations that contain the carbohydrates D-trehalose and β-cyclodextrin (CD) within the polycation backbone. The carbohydrate size (trehalose vs CD) and its distance from the charge centers affect the gene delivery behavior in BHK-21 cells. It is found that as the charge center is further removed from the carbohydrate unit, the toxicity is increased. Also, as the size of the carbohydrate moiety is enlarged from trehalose to β-cyclodextrin, the toxicity is reduced. The absence of a carbohydrate in the polycation produces high toxicity. All carbohydrate polycations transfect BHK-21 cells to approx. the same level of gene expression.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 33

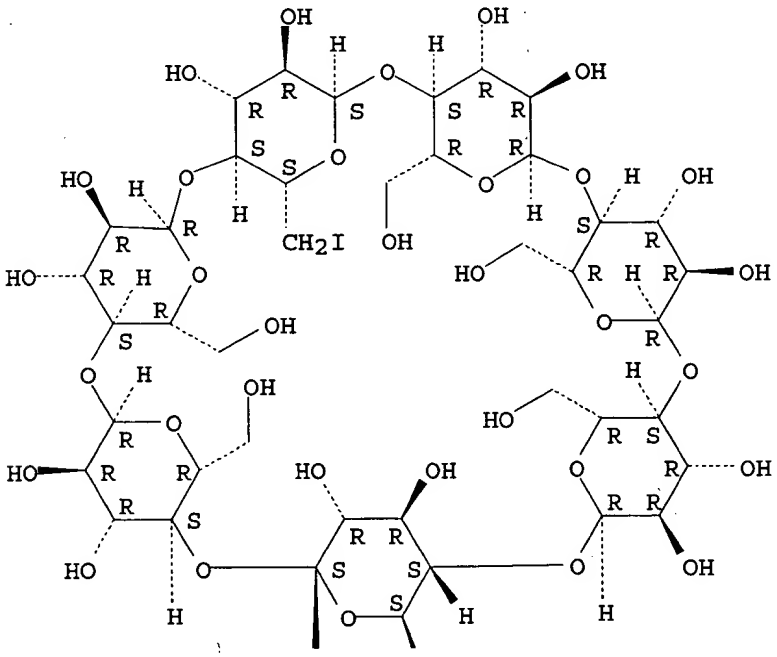
IT 18729-73-2P 18933-88-5P 21100-03-8P 30923-00-3P 52290-50-3P
76700-72-6P 98126-99-9P 101652-40-8P
118308-81-9P **162825-08-3P** 185613-13-2P **496932-11-7P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(carbohydrate size and its distance from charge centers in relation to structural effects of carbohydrate-containing polycations on gene delivery)

IT **76700-72-6P 98126-99-9P 101652-40-8P**
162825-08-3P 496932-11-7P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(carbohydrate size and its distance from charge centers in relation to structural effects of carbohydrate-containing polycations on gene delivery)

RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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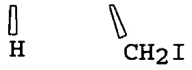
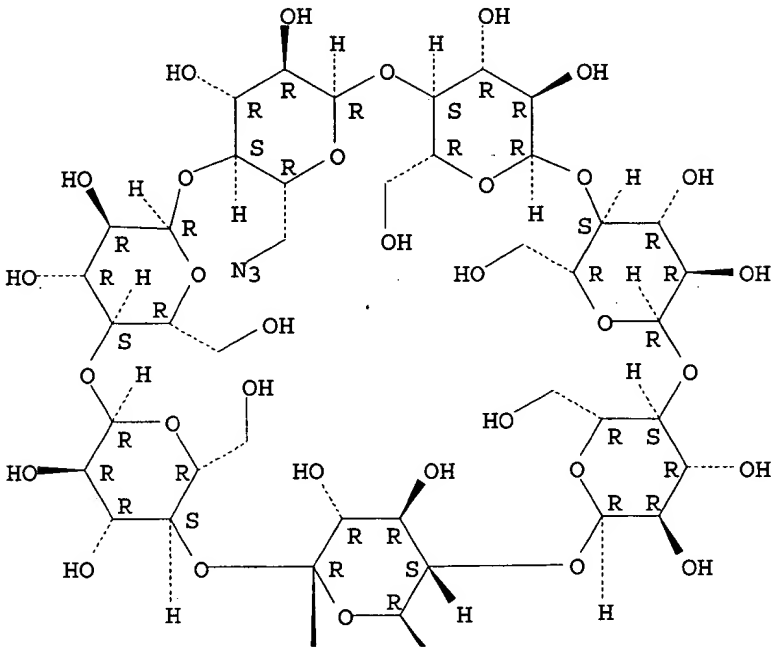


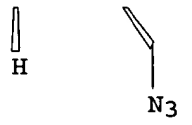
RN 98126-99-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diazido-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



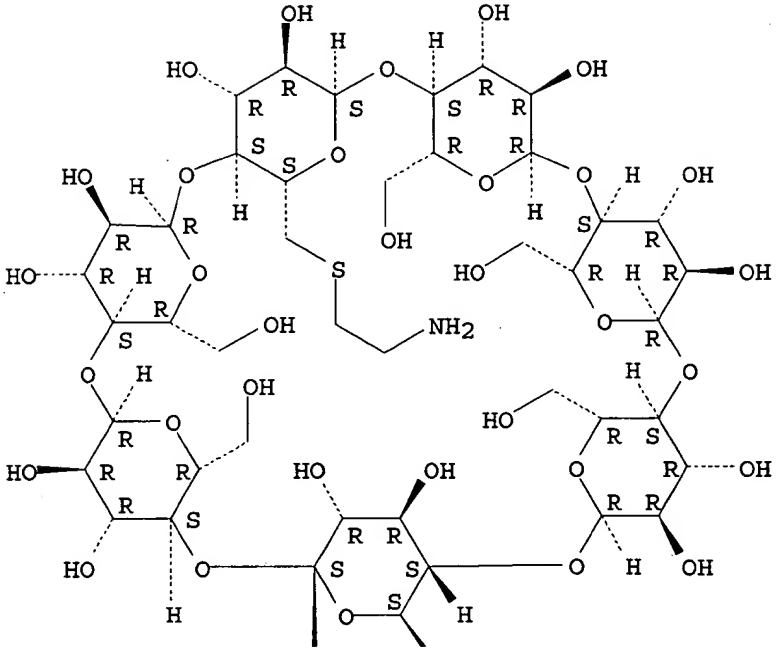
PAGE 2-A



RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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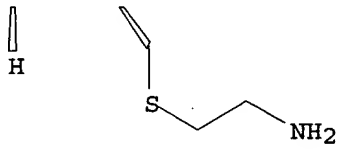
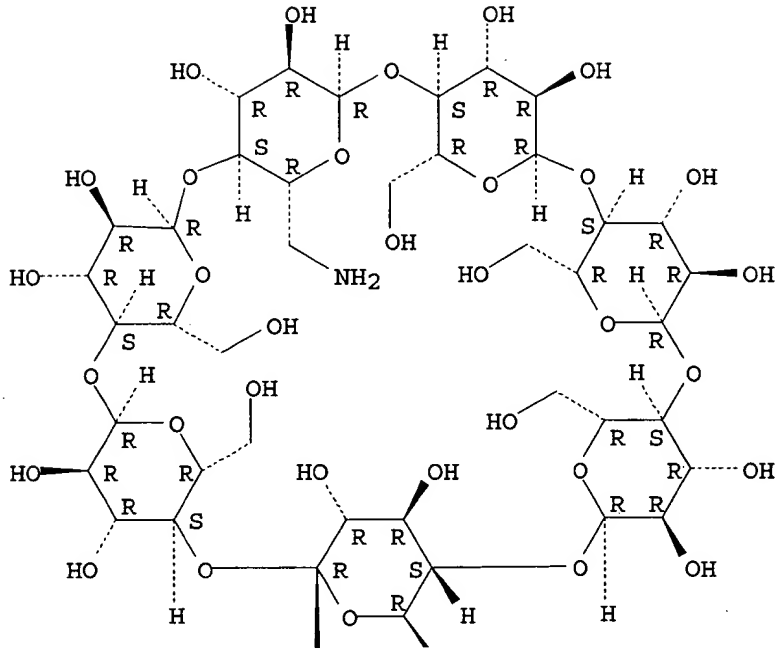


RN 162825-08-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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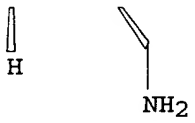
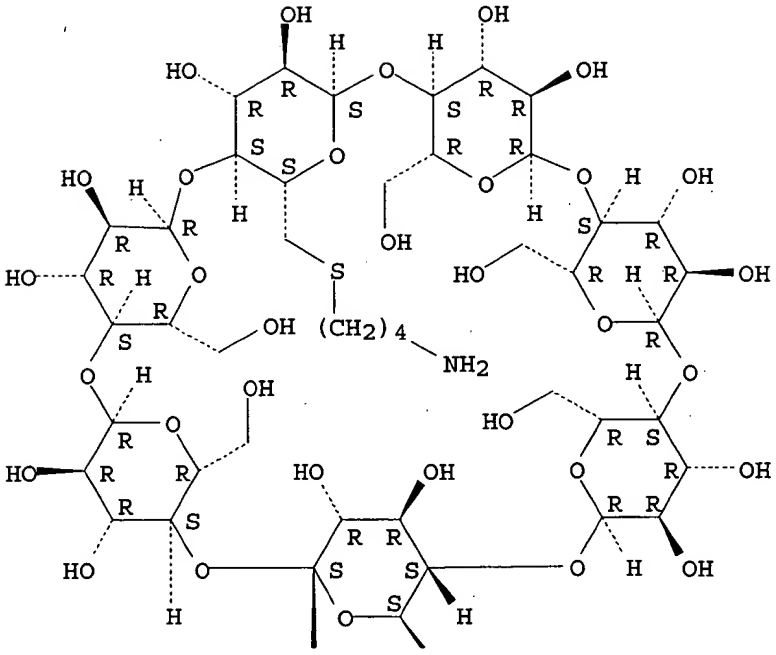


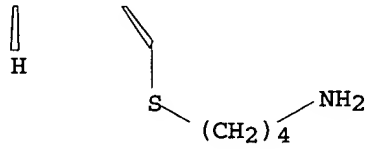
RN 496932-11-7 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(4-aminobutyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:487421 HCAPLUS
DOCUMENT NUMBER: 137:47645
TITLE: Preparation of adamantyl-polyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents
INVENTOR(S): Hwang, Pun Suzie; Gonzalez, Hector; Davis, Mark E.; Bellocq, Nathalie; Cheng, Jianjun
PATENT ASSIGNEE(S): California Institute of Technology, USA; Insert Therapeutics, Inc.
SOURCE: PCT Int. Appl., 138 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

WO 2002049676	A2	20020627	WO 2001-US48620	20011219	
WO 2002049676	A3	20021227			
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002029065	A5	20020701	AU 2002-29065	20011219	
US 2003008818	A1	20030109	US 2001-21312	20011219	
US 2003017972	A1	20030123	US 2001-21294	20011219	
EP 1351710	A2	20031015	EP 2001-990201	20011219	
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.:

US 2000-256341P	P	20001219
US 2000-256344P	P	20001219
US 2001-293543P	P	20010529
WO 2001-US48620	W	20011219

AB The invention provides a composition containing particulate composite of a **polymer** with a formula of adamantyl-(CH2)n-Ja-PEGx-Lb-(functional group)y wherein J is NH, C(O)NH(CH2)d, NHC(O)(CH2)d, XH2SS, CO2,(CH2)eOP(O)[O(CH2)e-adamantyl]O, peptide, polypeptide, NH(CO)CHR1NH(CO)CHR1NH; R1 is (CH2)aCO2H, (CH2)aCONH2; PEG is O(CH2CH2O)z; where z is 2-500; L is H, NH2, NH(CO)(CH2)e(CO)CH2, SO2CH:CH2, SS, CO2, carbohydrate residue; a is 0-1, b is 0-1; d is 0-6; e is 1-6; yr is 0-1, x is 0-1, and a therapeutic agent. The composition also contains a complexing agent. The **polymer** interacts with the complexing agent in a host-guest or a guest-host interaction to form an inclusion complex. A therapeutic composition of the invention may be used to deliver the therapeutic agent and to treat various disorders. Both the **polymer** of the particulate composite and the complexing agent may be used to introduce functionality into the therapeutic composition The invention also relates to a method of preparing a composition The method combines a therapeutic agent, a **polymer** having host or guest functionality, and a complexing agent having guest or host functionality to form the therapeutic composition The complexing agent forms an inclusion complex with the **polymer**. The invention also relates to a method of delivering a therapeutic agent. According to the method, a therapeutically effective amount of a therapeutic composition of the invention is administered to a mammal (e.g. human or animal) in recognized need of the therapeutic.

IC ICM A61K047-48

CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 6, 33, 34, 63

IT Carbohydrates, preparation
Glycols, preparation
Peptides, preparation
Polymers, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of adamantylpolyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents)

IT 57-88-5DP, Cholesterol, inclusion complexes 91-20-3DP, Naphthalene, inclusion complexes 281-23-2DP, Adamantane, inclusion complexes 2292-79-7DP, inclusion complexes 26282-59-7DP, cyclodextrin thioethers

81644-55-5DP, polyethoxylated ether derivs. 107658-43-5DP, adamantane-modified 254912-05-5P 254912-07-7P 254912-09-9P 264257-54-7DP, reaction products with **polymeric** cyclodextrin thioamidoamides 275354-52-4P 275354-53-5DP, lactosylamine adducts 275354-54-6P 438490-85-8P 438490-87-0DP, adducts with lactose 438490-89-2DP, fluorescein derivs. 438490-89-2P 438490-90-5P 438490-95-0DP, human transferrin bound
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of adamantylpolyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents)

IT 63-42-3D, succinimidyl derivs. 118-31-0, 1-Naphthalenemethanamine 768-94-5, 1-Aminoadamantane 870-46-2, tert-Butyl carbazate 1676-73-9 3406-84-6 3416-24-8, Glucosamine 4942-47-6, Tricyclo[3.3.1.13,7]decane-1-acetic acid 7535-00-4 7585-39-9, β-Cyclodextrin 14620-72-5 14641-93-1, α-Lactose 14651-42-4 17176-77-1, Dibenzyl phosphite 17768-41-1, Tricyclo[3.3.1.13,7]decane-1-methanamine 27072-45-3 32130-27-1 38285-78-8 39927-08-7 51974-68-6, Sodium 2-aminoethylthiolate 57757-57-0 58537-94-3 62087-82-5 67413-34-7 68528-80-3 123502-57-8 152310-58-2 155919-13-4 174569-25-6 **254912-03-3** 264257-54-7 **275354-51-3** 438490-88-1 438490-91-6 438490-94-9 438490-97-2
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation of adamantylpolyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents)

IT 29390-66-7P 35625-91-3P 67217-55-4P 73499-21-5P **76700-72-6P** 81644-55-5P **98126-99-9P 101652-40-8P** 107658-43-5P 159790-69-9P **162825-08-3P 254912-04-4P** **275354-53-5P 275354-55-7P** 438490-86-9P 438490-87-0P 438490-92-7P 438490-93-8P 438490-95-0P 438490-96-1P 438490-98-3P 438490-99-4P 438491-00-0P 438491-01-1P 438491-02-2P 438491-03-3P 438491-04-4P 438491-05-5P 438491-06-6P 438491-07-7P 438491-08-8P 438491-09-9P 438491-10-2P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of adamantylpolyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents)

IT **254912-03-3 275354-51-3**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation of adamantylpolyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents)

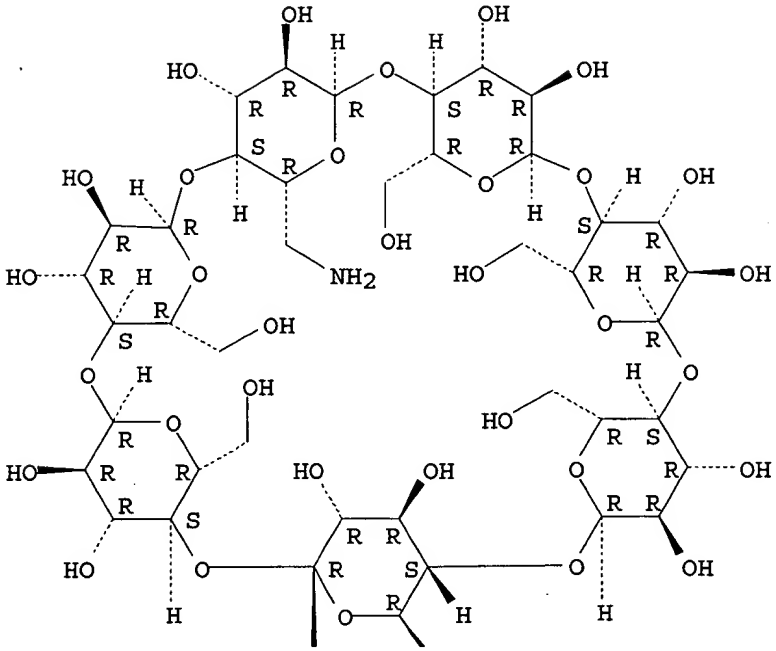
RN 254912-03-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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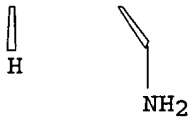
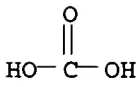


CM 2

CRN 463-79-6
CMF C H2 O3



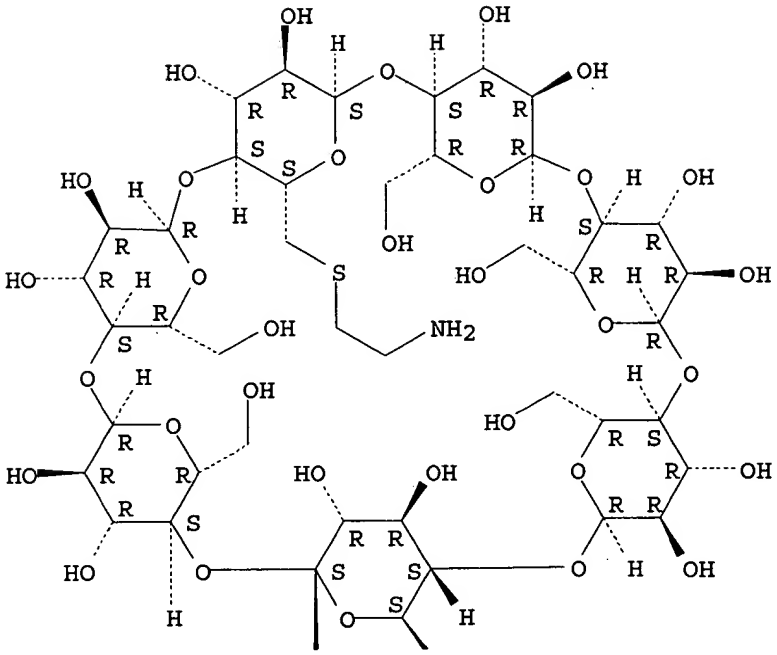
RN 275354-51-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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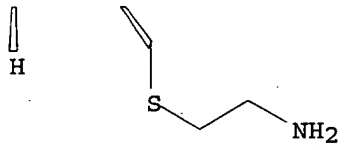

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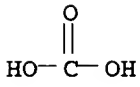
CRN 463-79-6
CMF C H2 O3

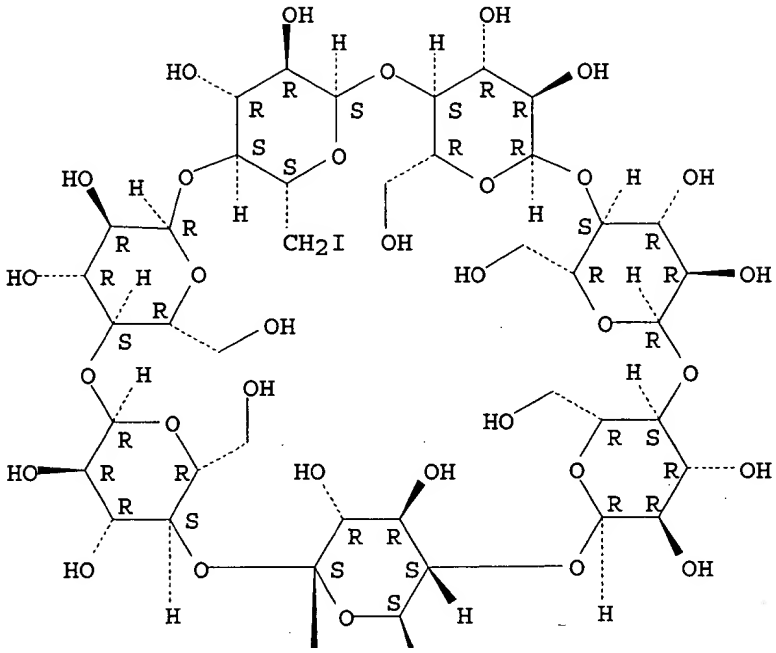


IT **76700-72-6P 98126-99-9P 101652-40-8P**
162825-08-3P 254912-04-4P 275354-53-5P
275354-55-7P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of adamantylpolyethylene glycol containing sugar and peptide residues and inclusion complexes as therapeutic agents)
RN 76700-72-6 HCAPLUS

CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

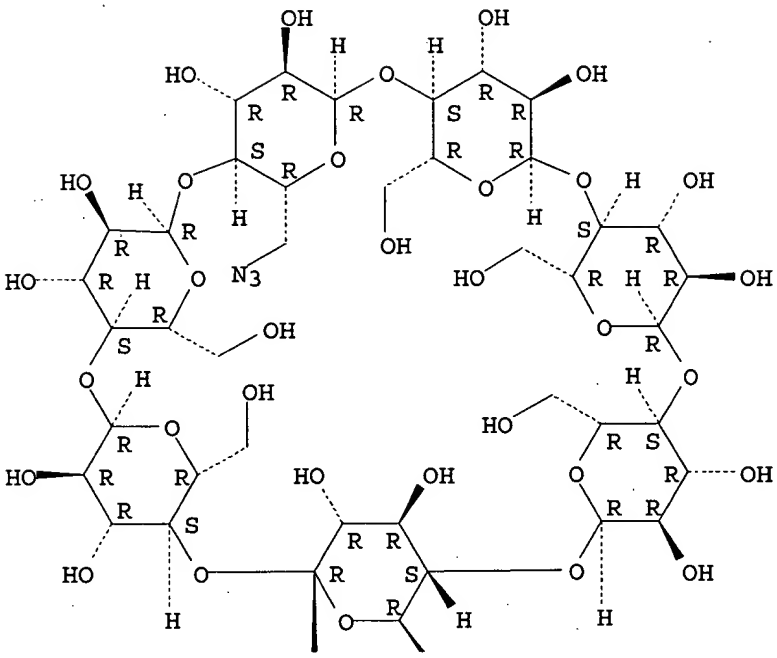


PAGE 2-A

RN 98126-99-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diazido-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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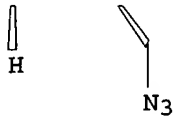
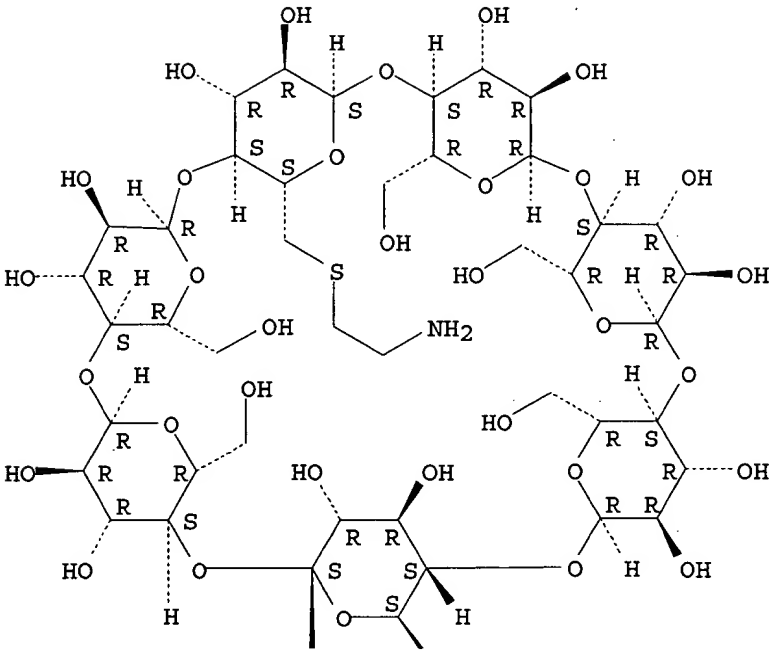


RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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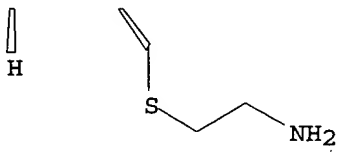
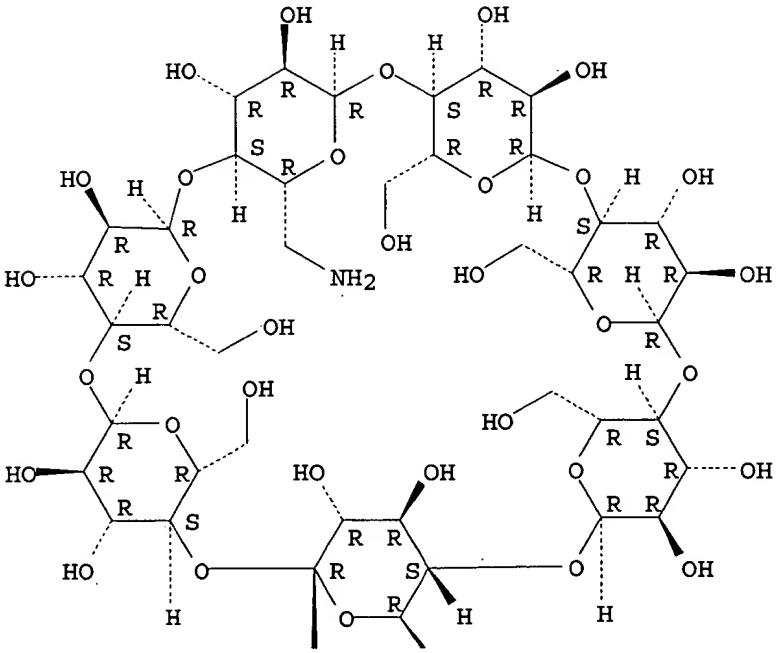


RN 162825-08-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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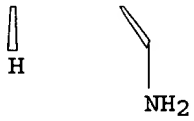

RN 254912-04-4 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[dithiobis[(1-oxo-3,1-propanediyl)oxy]]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

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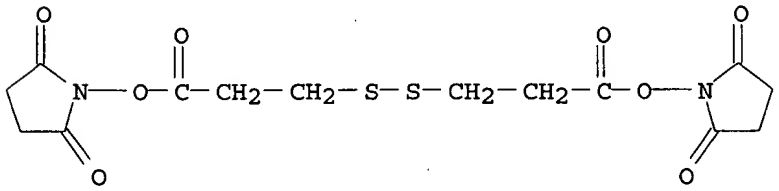
CRN 57757-57-0
CMF C14 H16 N2 O8 S2



CM 2

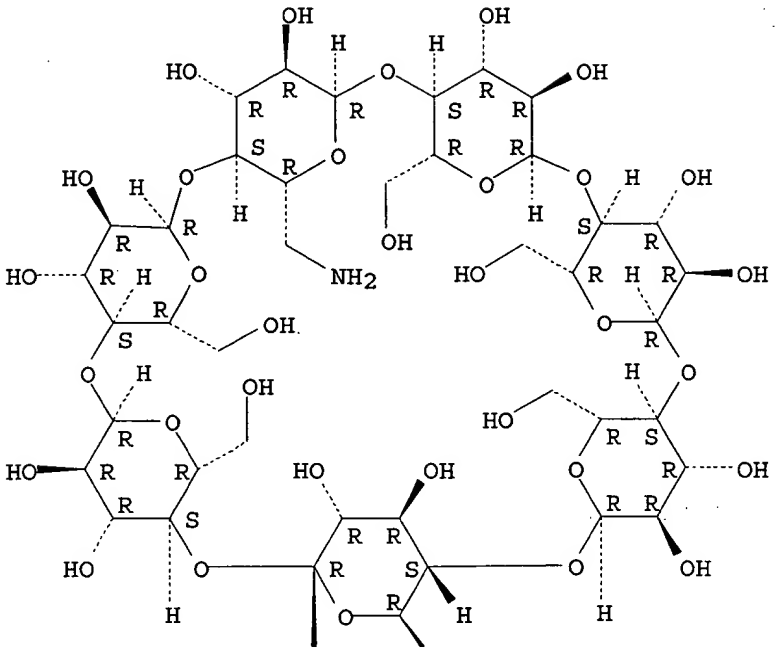
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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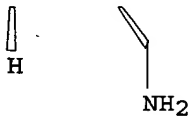
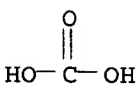


CM 4

CRN 463-79-6
CMF C H2 O3



RN 275354-53-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl octanediimidate dihydrochloride (9CI) (CA INDEX NAME)

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CRN 34490-86-3
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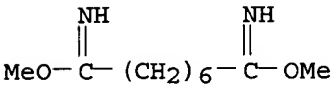


●2 HCl

CM 2

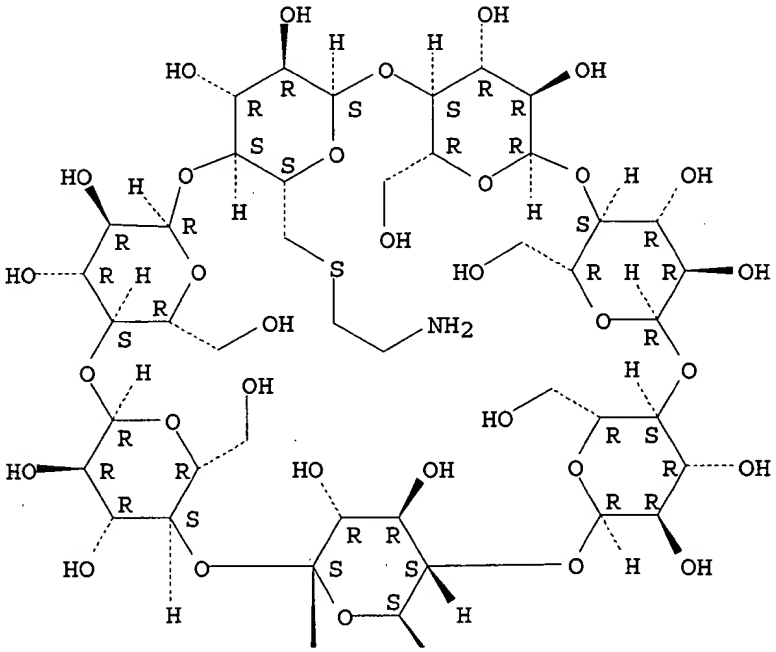
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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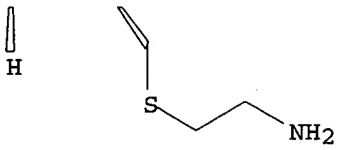
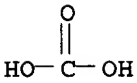


CM 4

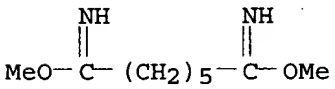
CRN 463-79-6
CMF C H2 O3



RN 275354-55-7 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl heptanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 58537-94-3
CMF C9 H18 N2 O2 . 2 Cl H



●2 HCl

CM 2

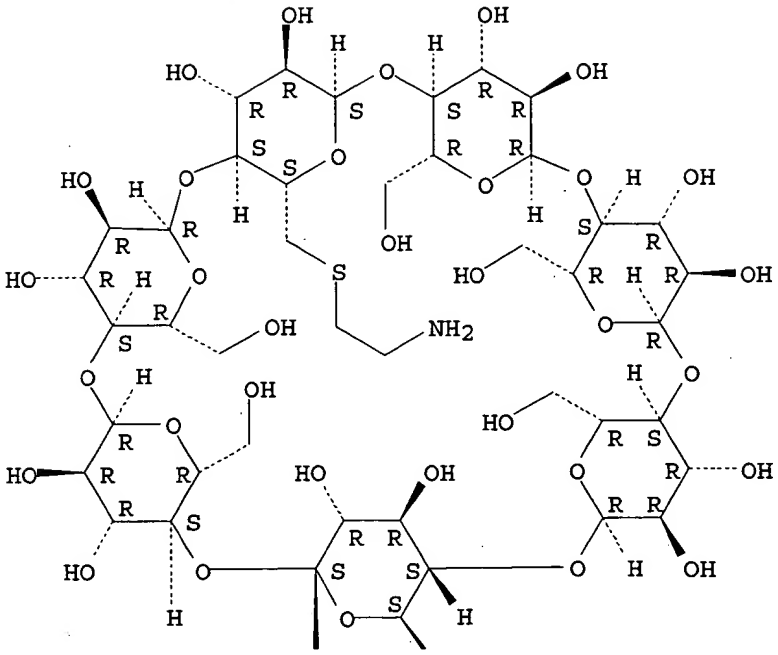
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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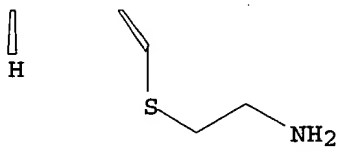
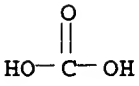


CM 4

CRN 463-79-6
CMF C H2 O3

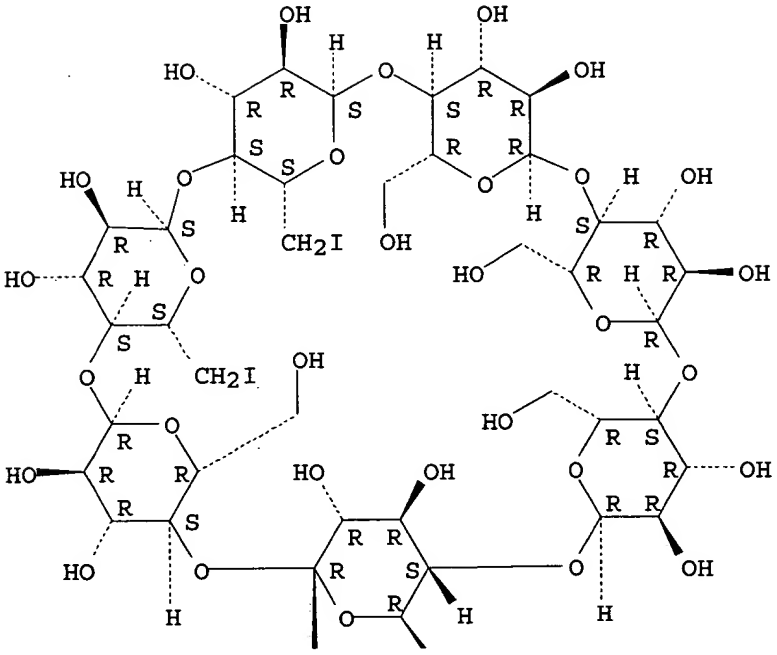


L55 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:400197 HCAPLUS
DOCUMENT NUMBER: 135:227176
TITLE: Difunctionalized β-cyclodextrins: synthesis and X-ray diffraction structure of 6I,6II-dideoxy-6I,6II-bis[2-(2-pyridyl)ethylamino]-β-cyclomaltoheptaose
AUTHOR(S): Saviano, Michele; Benedetti, Ettore; di Blasio, Benedetto; Gavuzzo, Enrico; Fierro, Olga; Pedone,

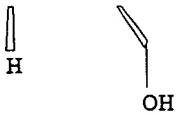
Carlo; Iacovino, Rosa; Rizzarelli, Enrico; Vecchio, Graziella
CORPORATE SOURCE: Biocrystallography Research Centre, CNR, Naples, 80134, Italy
SOURCE: Journal of the Chemical Society, Perkin Transactions 2 (2001) (6), 946-952
CODEN: JCSPGI; ISSN: 1472-779X
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:227176
AB The synthesis, solution NMR investigation and solid-state structural characterization of a new difunctionalized β-cyclodextrin (β-CD) are reported. 6I,6II-Dideoxy-6I,6II-bis[2-(2-pyridyl)ethylamino]-β-cyclomaltoheptaose is synthesized for the first time using a regioselective synthetic procedure. On the basis of an aqueous solution NMR investigation, the intramol. interaction of the two pyridine rings with the upper rim of the cavity is proposed. 6I,6II-Dideoxy-6I,6II-bis[2-(2-pyridyl)ethylamino]-β-cyclomaltoheptaose, C56H86N4O33, crystallizes in the monoclinic P21 space group with cell dimension a = 26.303(5), b = 15.670(5), c = 8.276(2) Å and β = 103.60(2)°, and 5.5 mols. of water for each independent β-cyclodextrin mol. The structure refines to R = 0.103 for 2270 observed reflections [I ≥ 3σ(I)] and represents the first example of a complete structural characterization of a branched difunctionalized β-cyclodextrin. In the solid state, the macrocycle structure maintains an approx. seven-fold symmetry with only small changes occurring in the cyclic carbohydrate conformation where two consecutive primary hydroxy groups are substituted with bulky moieties. The two aminoethylpyridine groups linked to contiguous glucosidic units show different behavior, with one group extending away from the cavity of the β-CD, the other remaining in the proximity of the 'mouth' of the cavity. However, in the crystal the aminoethylpyridine group extending away from the cavity of the β-CD is deeply inserted into the cavity of the adjacent β-CD mol. translated along the c axis, giving rise to long rows of β-CD mols. stabilized by these host-guest interactions. The resulting **polymeric** arrangement has already been observed in crystal structures of other monosubstituted β-CDs.
CC 33-7 (Carbohydrates)
Section cross-reference(s): 22, 75
IT 2706-56-1, 2-Pyridineethanamine **96761-41-0**
RL: **RCT (Reactant); RACT (Reactant or reagent)**
(regioselective synthesis and X-ray diffraction structure of 6I,6II-dideoxy-6I,6II-bis[2-(2-pyridyl)ethylamino]-β-cyclomaltoheptaose)
IT **96761-41-0**
RL: **RCT (Reactant); RACT (Reactant or reagent)**
(regioselective synthesis and X-ray diffraction structure of 6I,6II-dideoxy-6I,6II-bis[2-(2-pyridyl)ethylamino]-β-cyclomaltoheptaose)
RN 96761-41-0 HCAPLUS
CN β-Cyclodextrin, 6A,6B-dideoxy-6A,6B-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:115591 HCAPLUS
DOCUMENT NUMBER: 134:300714
TITLE: Effects of Structure of β-Cyclodextrin-Containing **Polymers** on Gene Delivery
AUTHOR(S): Hwang, Suzie J.; Bellocq, Nathalie C.; Davis, Mark E.
CORPORATE SOURCE: Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA
SOURCE: Bioconjugate Chemistry (2001), 12(2), 280-290 , CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Linear cationic β-cyclodextrin-based **polymers** (βCDPs) are capable of forming polyplexes with nucleic acids and transfecting cultured cells. The βCDPs are synthesized by the condensation of a diamino-cyclodextrin monomer A with a diimidate comonomer B. In this paper, the effects of **polymer** structure on polyplex formation,

in vitro transfection efficiency and toxicity are elucidated. By comparison of the βCDPs to polyamidines lacking cyclodextrins, the inclusion of a cyclodextrin moiety in the comonomer A units reduces the IC50s of the **polymer** by up to 3 orders of magnitude. The spacing between the cationic amidine groups is also important. Different **polymers** with 4, 5, 6, 7, 8, and 10 methylene units (βCDP4, 5, 6, 7, 8, and 10) in the comonomer B mol. are synthesized. Transfection efficiency is dependent on comonomer B length with up to 20-fold difference between **polymers**. Optimum transfection is achieved with the βCDP6 **polymer**. In vitro toxicity varied by 1 order of magnitude and the lowest toxicity is observed with βCDP8. The LD40 of the βCDP6 to mice is 200 mg/kg, making this **polymer** a promising agent for in vivo gene delivery applications.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 33

ST cyclodextrin contg **polymer** structure gene delivery

IT Drug delivery systems
(gene; structure of β-cyclodextrin-containing **polymers** on gene delivery)

IT Electron density
Gene therapy
Hydrophobicity
Transformation, genetic
(structure of β-cyclodextrin-containing **polymers** on gene delivery)

IT 254912-11-3P 334706-16-0P 334706-17-1P 334706-18-2P 334706-19-3P 334706-20-6P
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(structure of β-cyclodextrin-containing **polymers** on gene delivery)

IT 60-23-1, Cysteamine 124-09-4, 1,6-Hexanediamine, reactions 1675-69-0, Azelanitrile 1871-96-1, Sebaconitrile 3406-84-6, Biphenyl-4,4'-disulfonyl chloride 4543-66-2, Dodecanedinitrile 7585-39-9, β-Cyclodextrin 14620-72-5, Dimethyladipimidate dihydrochloride 34490-86-3, Dimethylsuberimidate dihydrochloride 58537-94-3, Dimethylpimelimidate dihydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(structure of β-cyclodextrin-containing **polymers** on gene delivery)

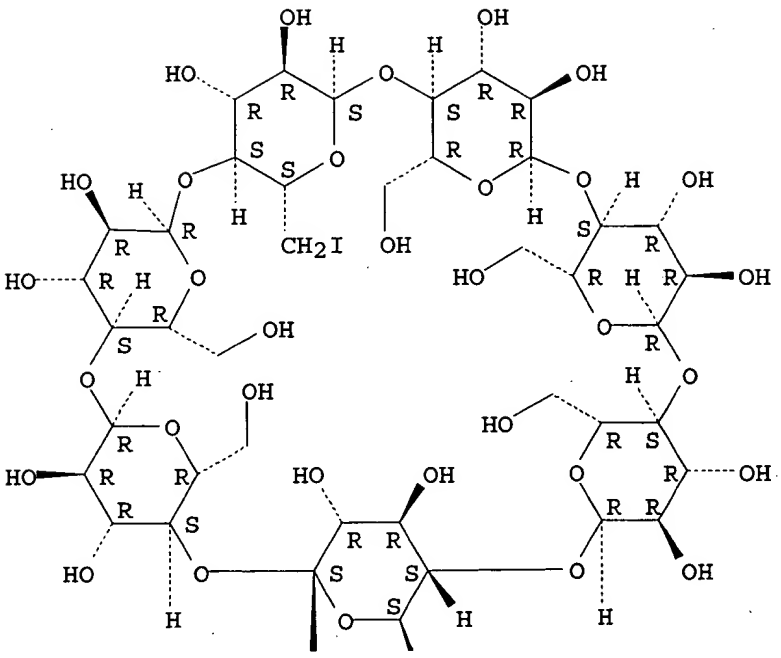
IT 60998-60-9P, Decanediimidic acid, dimethyl ester, dihydrochloride 71160-06-0P, Dodecanediimidic acid, dimethyl ester, dihydrochloride 73499-21-5P **76700-72-6P 101652-40-8P** 275354-58-0P 275354-59-1P 334706-03-5P 334706-14-8P 334706-15-9P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(structure of β-cyclodextrin-containing **polymers** on gene delivery)

IT **76700-72-6P 101652-40-8P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(structure of β-cyclodextrin-containing **polymers** on gene delivery)

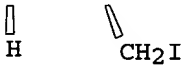
RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



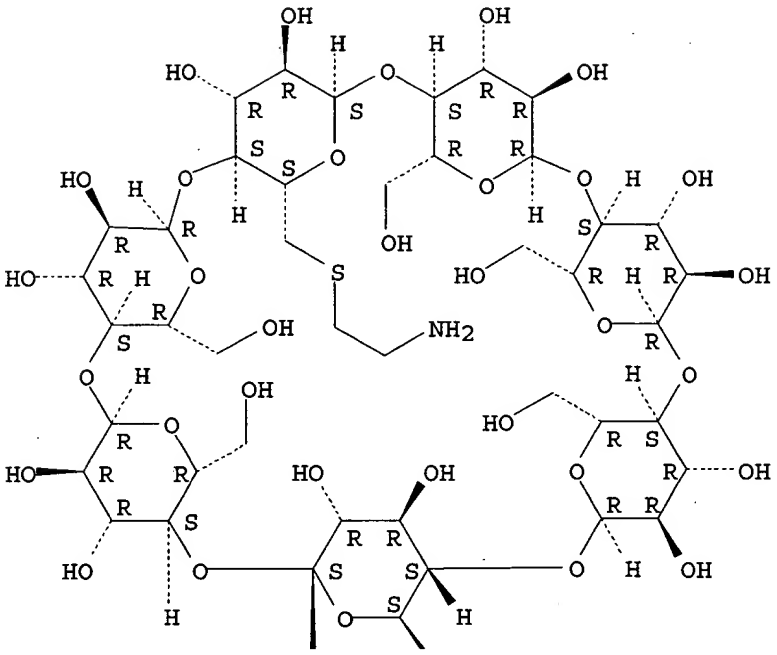
PAGE 2-A



RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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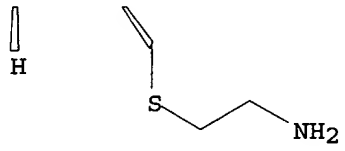


REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:23591 HCAPLUS
DOCUMENT NUMBER: 134:281423
TITLE: Chiral β-cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymerization**
AUTHOR(S): Mayr, B.; Sinner, F.; Buchmeiser, M. R.
CORPORATE SOURCE: Institute of Analytical Chemistry and Radiochemistry, University of Innsbruck, Innsbruck, A-6020, Austria
SOURCE: Journal of Chromatography, A (2001), 907(1-2), 47-56
CODEN: JCRAEY; ISSN: 0021-9673
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A series of norborn-2-ene-derivatized β-cyclodextrins (β-CDs), 6-O-(norborn-2-ene-5-carboxyl)-β-CD (1), tetrakis(6-O-norborn-2-ene-5-carboxyl)-β-CD (2), 6-O-(7-oxanorborn-2-ene-5-carboxyl)-β-CD (3), 6-O-(6-norborn-2-ene-5-carbonylaminohexoyl)-β-CD (4),

6-O-(norborn-2-ene-5-ylmethoxymethylsilyl)-β-CD (5), tris(6-O-norborn-2-ene-5-ylmethoxymethylsilyl)-β-CD (6), tetrakis(6-O-norborn-2-ene-5-ylmethoxymethylsilyl)-β-CD (7) and hexakis(6-O-norborn-2-ene-5-ylmethoxymethylsilyl)-β-CD (8), was synthesized. Compds. 1-3 were prepared via reaction of β-CD with norborn-2-ene-5-carboxylic chloride and 7-oxanorborn-2-ene-5-carboxylic chloride, resp.; compds. 5-8 were synthesized from norborn-2-ene-5-yl-methyldichlorosilane and β-CD, resp. Compound 4 was accessible by reaction of norborn-2-ene-5-carboxylaminohexoyl chloride with β-CD. Compds. 1-8 were surface grafted onto norborn-2-ene-derivatized silica-based supports using ring-opening metathesis **polymn**. employing the ruthenium-based initiator bis(tricyclohexylphosphino)benzyli deneruthenium dichloride [Cl2Ru(CHC6H5)(PCy3)2, Cy=cyclohexyl]. Generally speaking, the resulting chiral stationary phases (CSPs) I-VIII may be prepared with high reproducibility and may be used within a pH of 2-10. Thus, relative standard deviations (σn-1) of the mean resolution (Rs) are <7%. The CSPs were used for the enantioselective separation of β-blockers, N-dansyl-, N-3,5-dinitrobenzoyl- and Fmoc-protected amino acids and were characterized in terms of chemical stability, selectivity (α') and resolution (Rs). Addnl., the role of the spacer as well as influences of capacity and the degree of substitution of the β-CD moiety on the separation characteristics were determined

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 34, 38, 44, 80

ST chiral cyclodextrin **polymer** metathesis graft **polymn**; amino acid enantioselective sepn silica support; norbornene deriv cyclodextrin **polymer** graft silica; ruthenium catalyst metathesis **polymn** norbornene cyclodextrin

IT Liquid chromatographic stationary phases
(chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of amino acids)

IT Amino acids, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of amino acids)

IT Polyalkenamers
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of amino acids)

IT **Polymerization** catalysts
(metathetic, ring-opening, ruthenium compound; chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of amino acids)

IT **Polymerization**
(metathetic, ring-opening; chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of amino acids)

IT 172222-30-9
RL: CAT (Catalyst use); USES (Uses)
(catalysts; chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of amino acids)

IT 525-66-6P, Propranolol 1098-50-6P, DNS-valine 1104-36-5P, DNS-phenylalanine 6620-60-6P, Proglumide 17039-58-6P, DNS-methionine 19461-29-1P, DNS-tryptophan 29122-68-7P, Atenolol 35021-12-6P,

DNS-serine 35021-16-0P 35661-40-6P 51384-51-1P, Metoprolol 77495-25-1P 83037-88-1P 97878-75-6P
RL: PUR (Purification or recovery); PREP (Preparation)
(chiral cyclodextrin-based **polymer** supports prepared via ring-opening metathesis graft-**polymn**. for enantioselectic separation of)

IT 332363-47-0DP, graft **polymers** with norbornene-derivatized silica-based supports
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(monomers; preparation and application for enantioselectic separation of amino acids)

IT 330218-57-0P 332363-47-0P 332363-48-1P 332363-49-2P 332363-50-5P **332363-51-6P** 332363-52-7P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(monomers; preparation and metathesis graft **polymn**. with norbornene-derivatized silica-based supports)

IT 332363-46-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(monomers; preparation and metathesis graft **polymn**. with norbornene-derivatized silica-based supports)

IT 14319-64-3DP, reaction products with silica support, graft **polymers** with norbornene-containing cyclodextrin 119792-17-5DP, Nucleosil 300-5, reaction products with trichloronorbornenesilane, graft **polymers** with norbornene-containing cyclodextrin 330218-57-0DP, graft **polymers** with norbornene-derivatized silica-based supports 332363-46-9DP, graft **polymers** with norbornene-derivatized silica-based supports 332363-48-1DP, graft **polymers** with norbornene-derivatized silica-based supports 332363-49-2DP, graft **polymers** with norbornene-derivatized silica-based supports 332363-50-5DP, graft **polymers** with norbornene-derivatized silica-based supports 332363-51-6DP, graft **polymers** with norbornene-derivatized silica-based supports 332363-52-7DP, graft **polymers** with norbornene-derivatized silica-based supports
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and application for enantioselectic separation of amino acids)

IT **332363-51-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(monomers; preparation and metathesis graft **polymn**. with norbornene-derivatized silica-based supports)

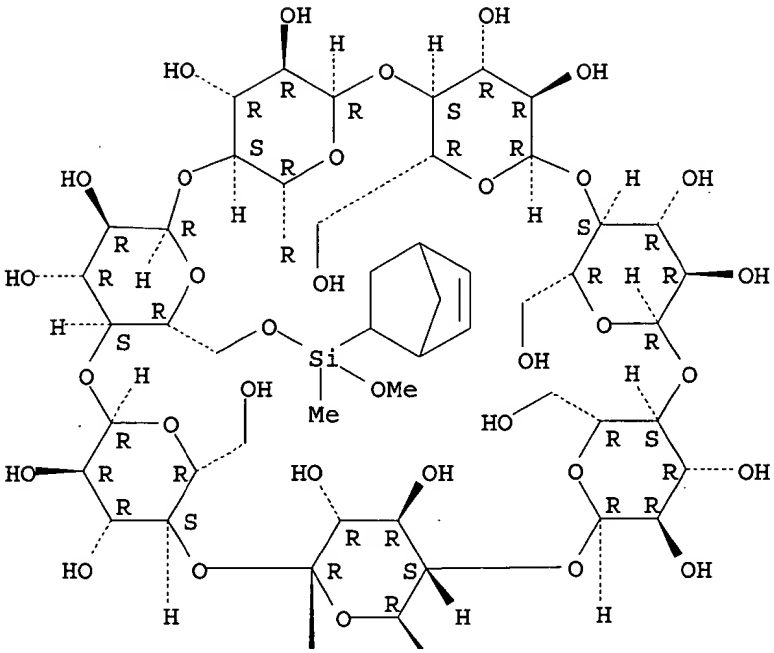
RN 332363-51-6 HCAPLUS
CN β-Cyclodextrin, 6A,6B,6?,6?-tetrakis-O-(bicyclo[2.2.1]hept-5-en-2-ylmethoxymethylsilyl)- (9CI) (CA INDEX NAME)

CM 1

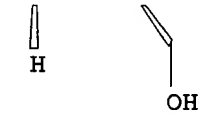
CRN 336128-22-4
CMF C60 H98 O37 Si2

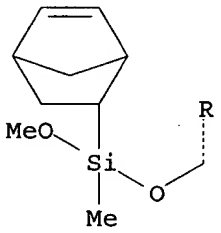
Absolute stereochemistry.

PAGE 1-A



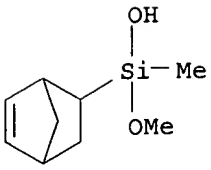
PAGE 2-A





CM 2

CRN 302598-12-5
CMF C9 H16 O2 Si



REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:401687 HCAPLUS
DOCUMENT NUMBER: 133:48948
TITLE: Supramolecular complexes containing therapeutic agents
INVENTOR(S): Davis, Mark E.; Gonzalez, Hector; Hwang, Suzie
PATENT ASSIGNEE(S): California Institute of Technology, USA
SOURCE: PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000033885	A1	20000615	WO 1999-US28547	19991203
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1133318	A1	20010919	EP 1999-965967	19991203
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002531530	T2	20020924	JP 2000-586375	19991203

PRIORITY APPLN. INFO.: US 1998-110847P P 19981204
US 1999-127856P P 19990405
WO 1999-US28547 W 19991203

AB A method of preparing a supramol. complex containing at least one therapeutic agent and a multi-dimensional **polymer** network is described. A supramol. complex prepared by a method of the invention is described. A method of treatment by administering a therapeutically effective amount of a supramol. complex of the invention is also described. Such a supramol. complex may be used as a delivery vehicle for various therapeutic agents. The **polymers** include linear or branched polyethyleneimine and cyclodextrin derivs.

IC ICM A61K047-48
ICS A61K031-335; A61K031-70

CC 63-6 (Pharmaceuticals)

ST drug **polymer** network complex prepn; cyclodextrin drug ligand complex delivery vehicle

IT 9002-98-6DP, Polyethylenimine, reaction product with β-cyclodextrinthiol and functionalized PEG 25322-68-3DP, PEG, reaction product with β-cyclodextrinthiol and polyethylenimine 29390-66-7P

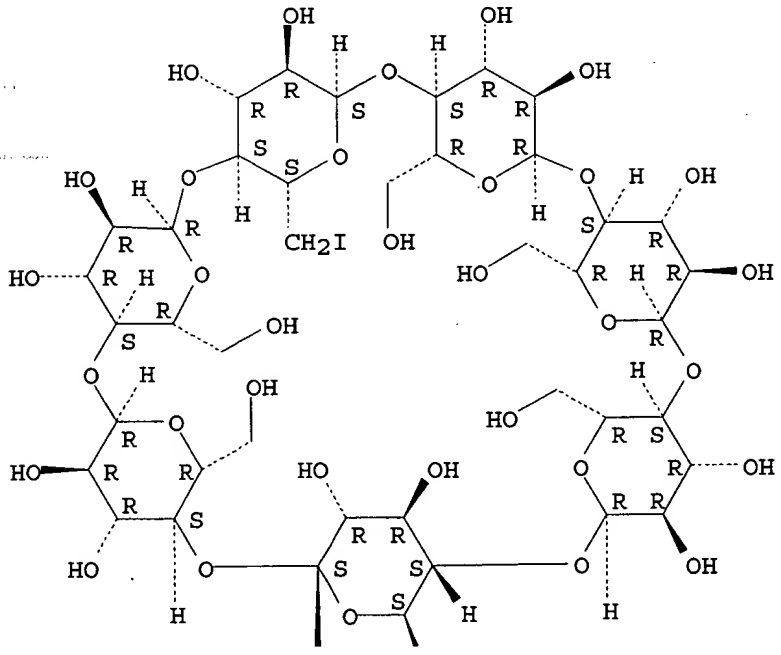
35625-91-3P 39927-08-7P 52539-19-2P 67217-55-4P 73499-21-5P
76700-72-6P 81644-55-5DP, reaction product with functionalized PEG and polyethylenimine 81644-55-5P **98126-99-9P**
101652-40-8P 254912-03-3P 254912-04-4P
254912-05-5DP, oxidized **254912-05-5P**
254912-07-7P 254912-09-9P 275354-50-2P
275354-52-4DP, reaction products with DNA **275354-53-5P**
275354-54-6P 275354-55-7P 275354-57-9P
275354-58-0P 275354-59-1P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of supramol. complexes containing therapeutic agents)

IT **76700-72-6P 98126-99-9P 101652-40-8P**
254912-03-3P 254912-04-4P 254912-05-5DP, oxidized **254912-05-5P 254912-07-7P**
254912-09-9P 275354-52-4DP, reaction products with DNA **275354-53-5P 275354-54-6P 275354-55-7P**
275354-57-9P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of supramol. complexes containing therapeutic agents)

RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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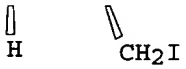
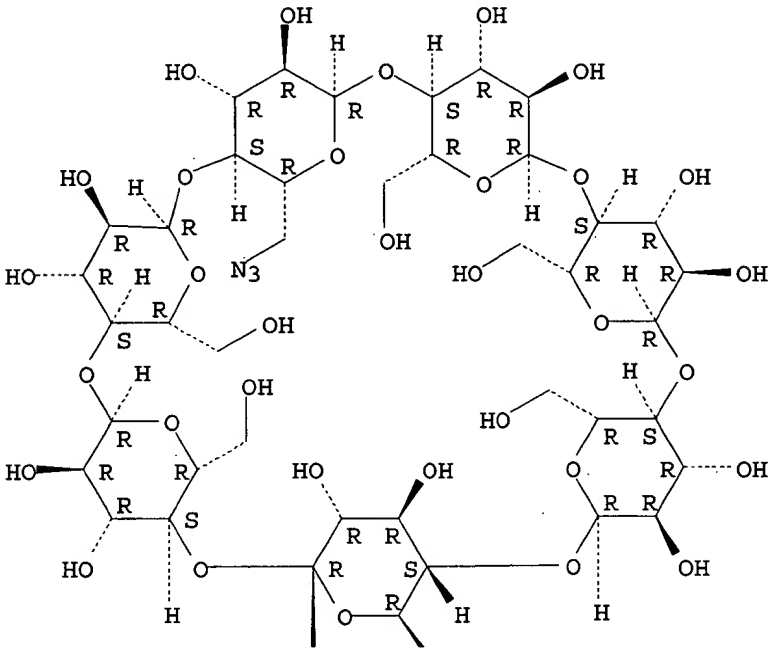


RN 98126-99-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diazido-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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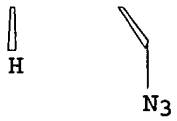
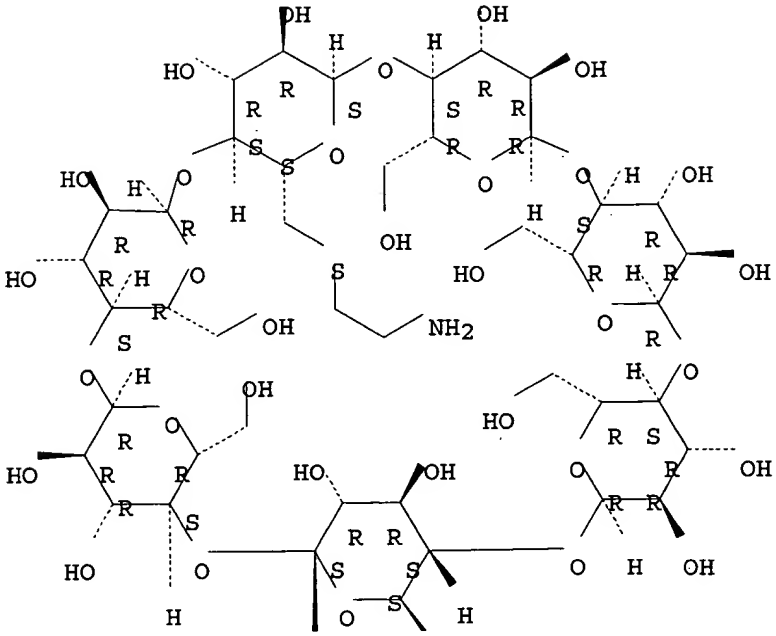


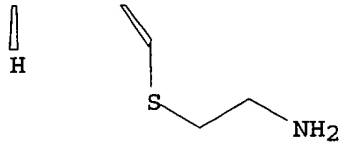
RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



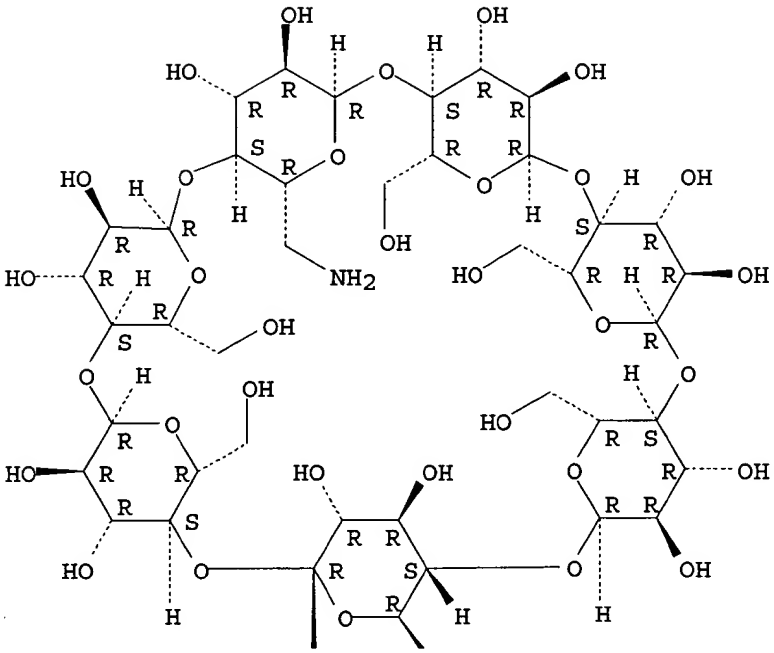
RN 254912-03-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2) (9CI) (CA INDEX NAME)

CM 1

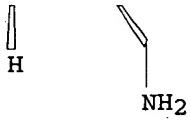
CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A

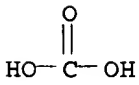


PAGE 2-A



CM 2

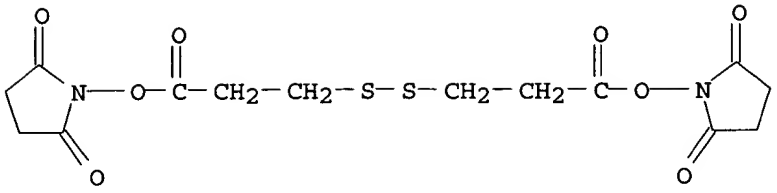
CRN 463-79-6
CMF C H2 O3



RN 254912-04-4 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[dithiobis[(1-oxo-3,1-propanediyl)oxy]]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

CM 1

CRN 57757-57-0
CMF C14 H16 N2 O8 S2



CM 2

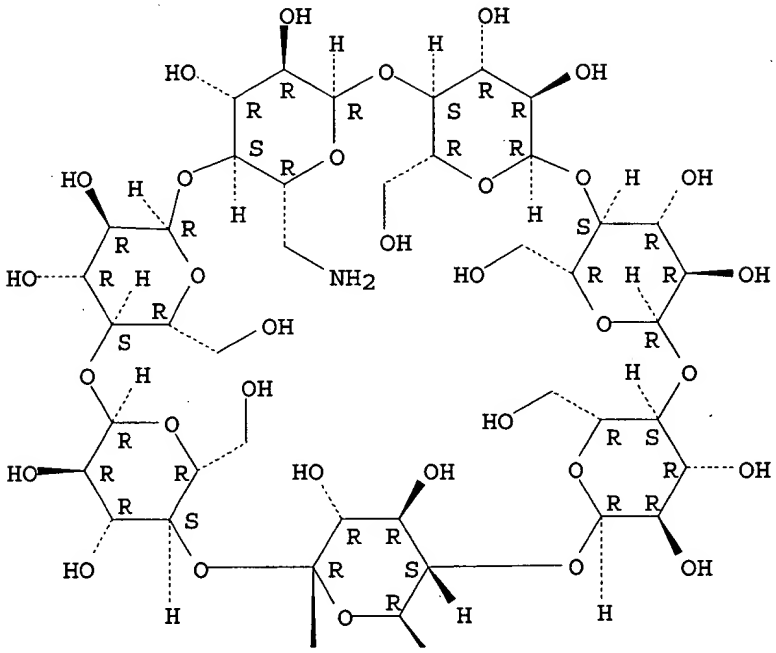
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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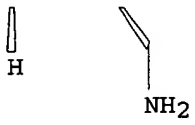
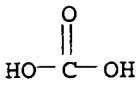


CM 4

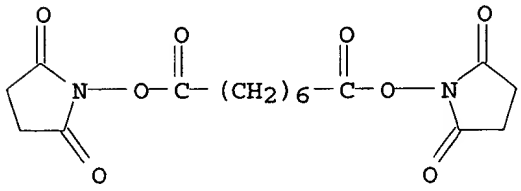
CRN 463-79-6
CMF C H2 O3



RN 254912-05-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[(1,8-dioxo-1,8-octanediyl)bis(oxy)]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

CM 1

CRN 68528-80-3
CMF C16 H20 N2 O8



CM 2

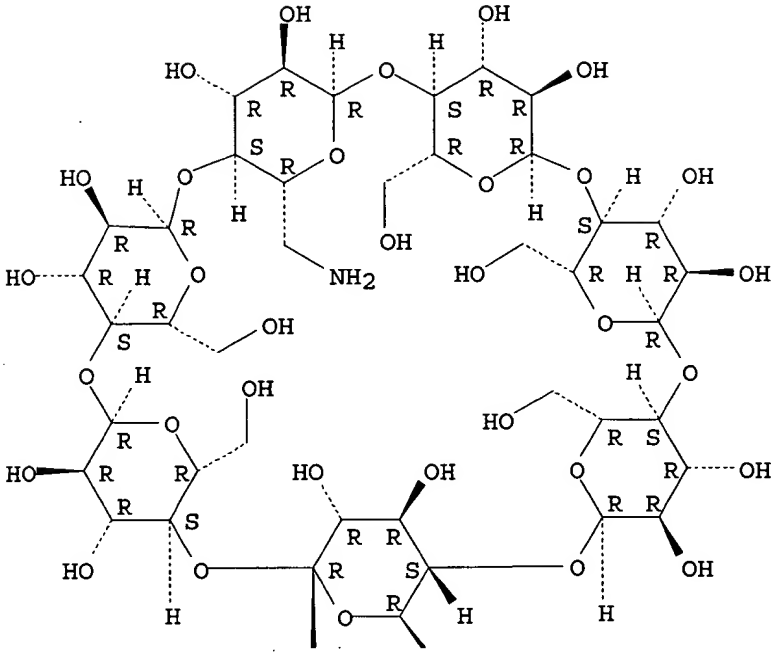
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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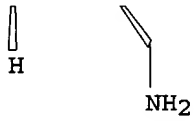
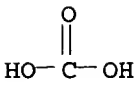


CM 4

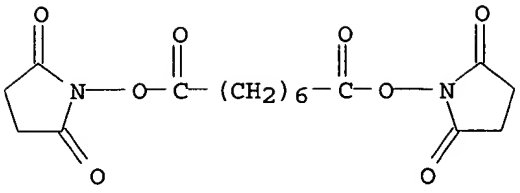
CRN 463-79-6
CMF C H2 O3



RN 254912-05-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[(1,8-dioxo-1,8-octanediyl)bis(oxy)]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

CM 1

CRN 68528-80-3
CMF C16 H20 N2 O8



CM 2

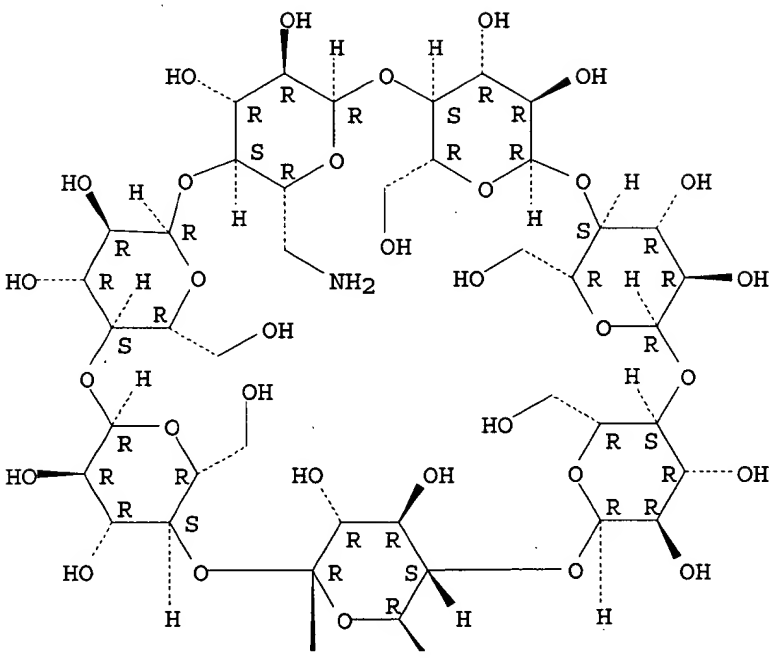
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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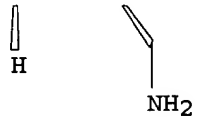
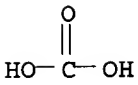


CM 4

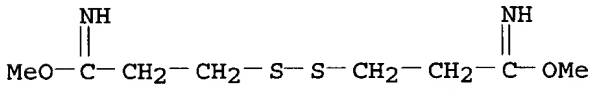
CRN 463-79-6
CMF C H2 O3



RN 254912-07-7 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with dimethyl 3,3'-dithiobis[propanimidate] dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 38285-78-8
CMF C8 H16 N2 O2 S2 . 2 Cl H



●2 HCl

CM 2

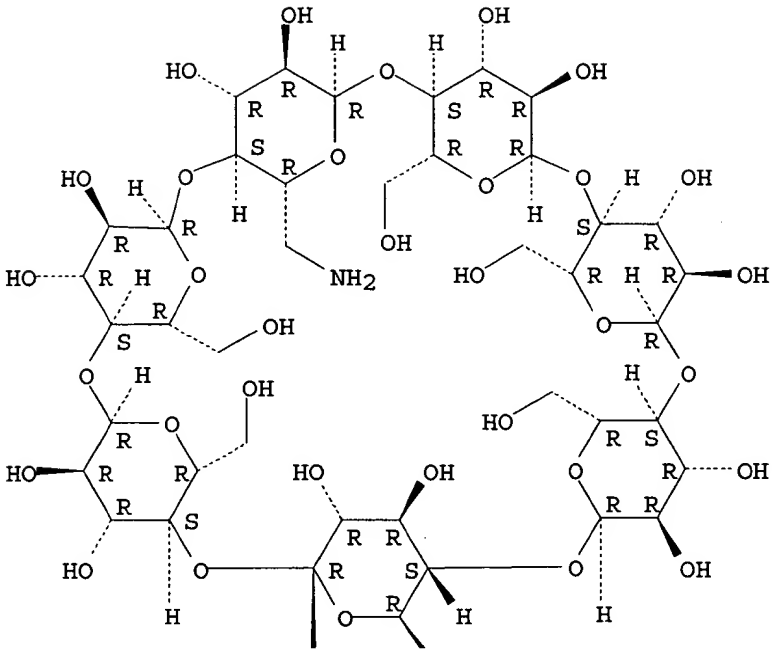
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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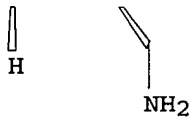
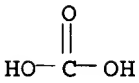


CM 4

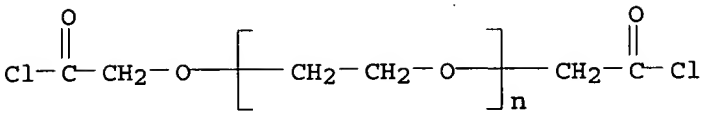
CRN 463-79-6
CMF C H2 O3



RN 254912-09-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with α-(2-chloro-2-oxoethyl)-ω-(2-chloro-2-oxoethoxy)poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 35625-91-3
CMF (C2 H4 O)n C4 H4 Cl2 O3
CCI PMS



CM 2

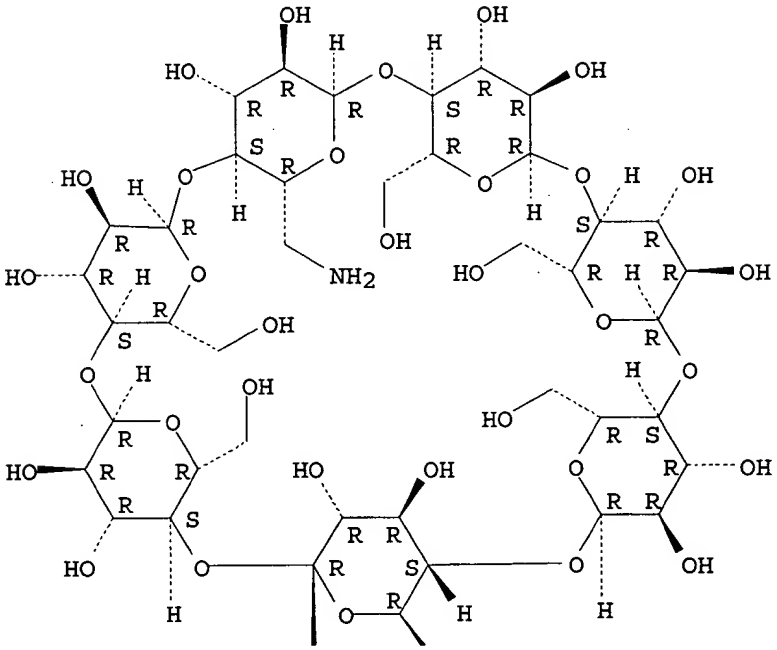
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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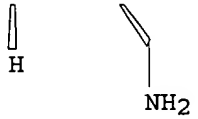


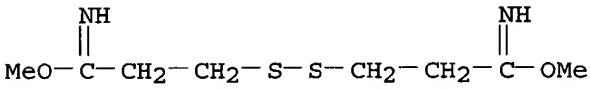
CM 4

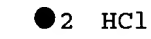
CRN 463-79-6
CMF C H2 O3

RN 275354-52-4 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl 3,3'-dithiobis[propanimidate] dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 38285-78-8
CMF C8 H16 N2 O2 S2 . 2 Cl H





CM 2

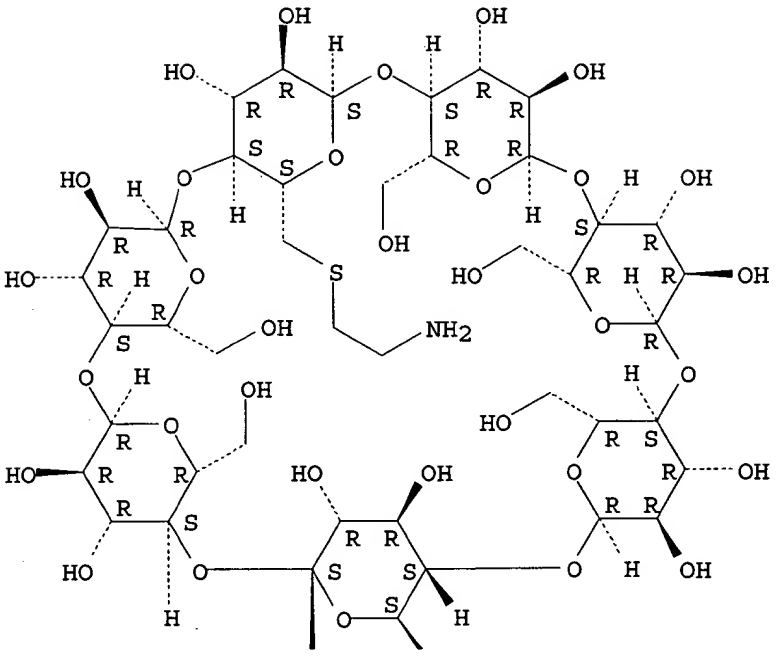
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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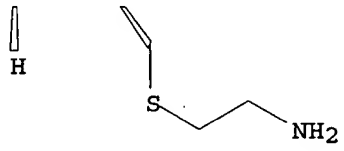
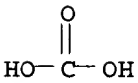


CM 4

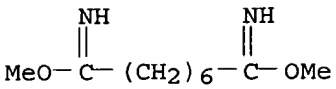
CRN 463-79-6
CMF C H2 O3



RN 275354-53-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl octanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 34490-86-3
CMF C10 H20 N2 O2 . 2 Cl H



●2 HCl

CM 2

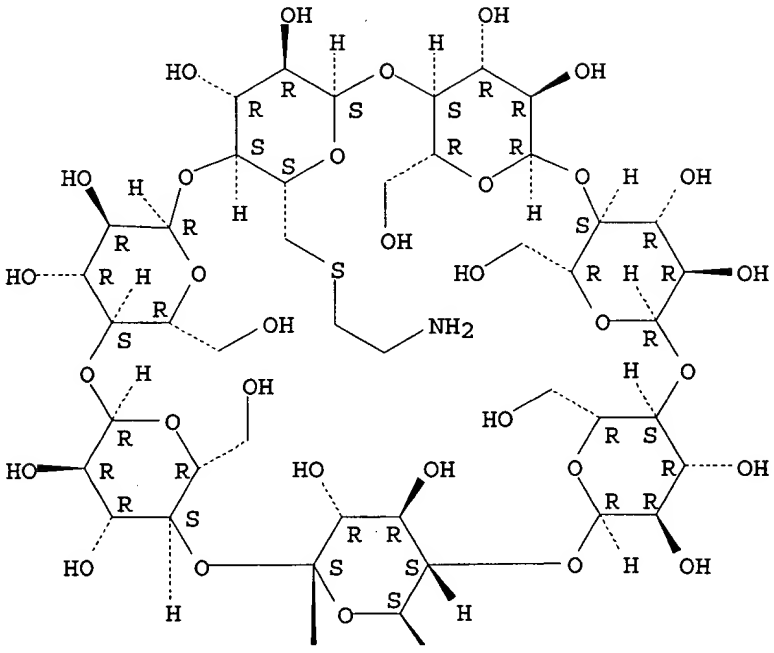
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

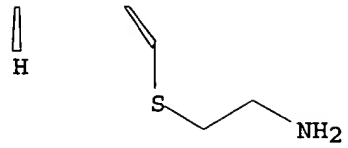
CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

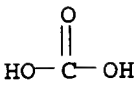
PAGE 1-A





CM 4

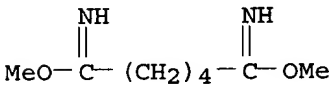
CRN 463-79-6
CMF C H2 O3



RN 275354-54-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl hexanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 14620-72-5
CMF C8 H16 N2 O2 . 2 Cl H



●2 HCl

CM 2

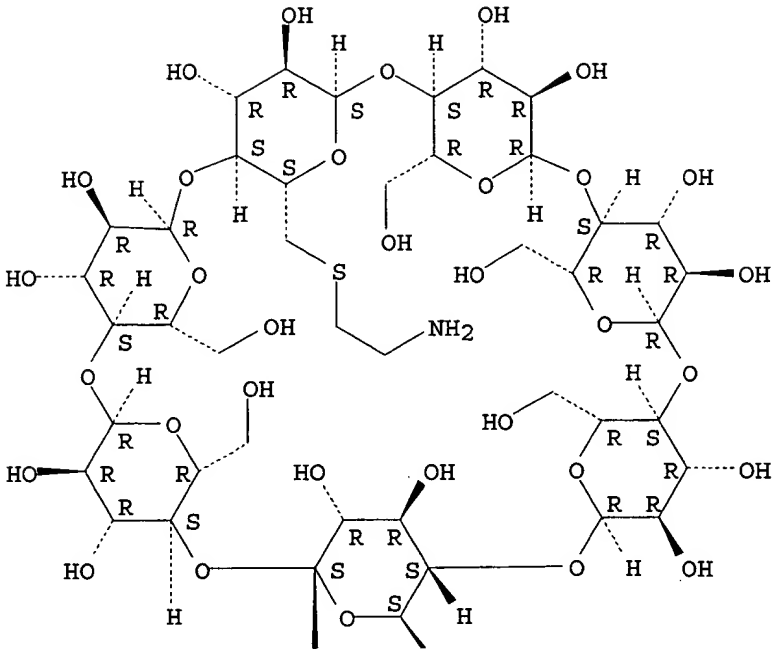
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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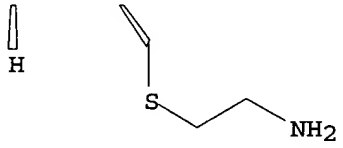
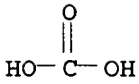


CM 4

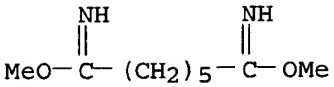
CRN 463-79-6
CMF C H2 O3



RN 275354-55-7 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl heptanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 58537-94-3
CMF C9 H18 N2 O2 . 2 Cl H



● 2 HCl

CM 2

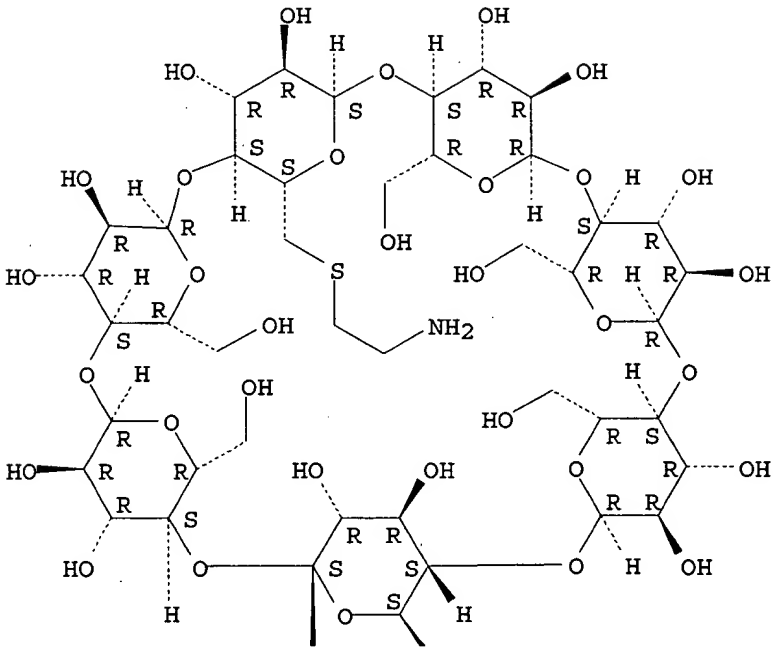
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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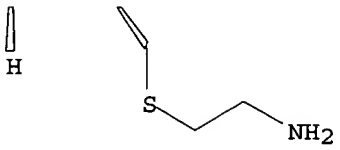
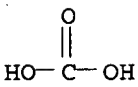


CM 4

CRN 463-79-6
CMF C H2 O3



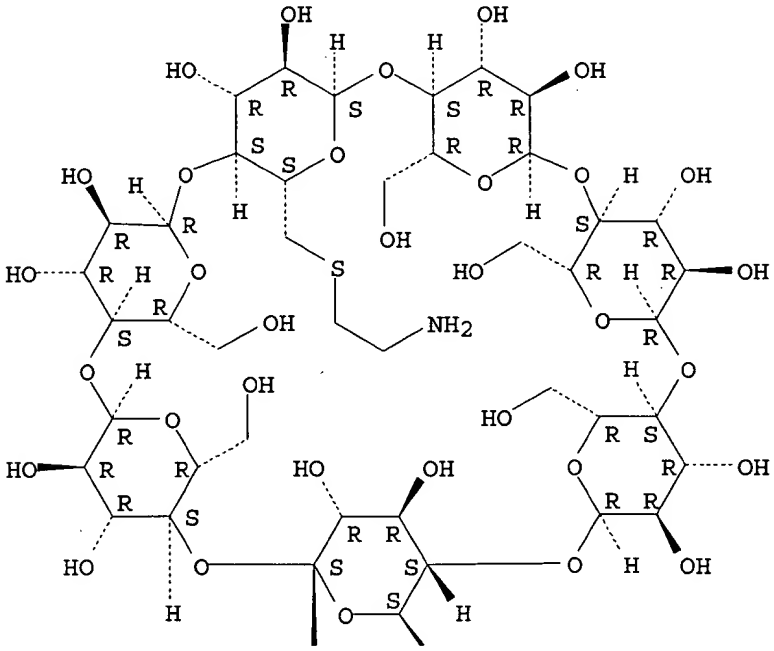
RN 275354-57-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, polymer with α-(chloroacetyl)-ω-[(chloroacetyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

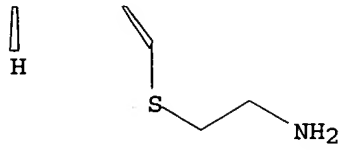
CM 1

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

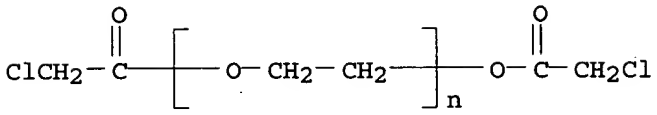
PAGE 1-A





CM 2

CRN 56867-89-1
CMF (C2 H4 O)n C4 H4 Cl2 O3
CCI PMS



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:34909 HCAPLUS
DOCUMENT NUMBER: 132:94914
TITLE: Preparation of linear cyclodextrin **copolymers**
INVENTOR(S): Gonzalez, Hector; Hwang, Suzie Sue Jean; Davis, Mark E.
PATENT ASSIGNEE(S): California Institute of Technology, USA
SOURCE: PCT Int. Appl., 84 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000001734	A1	20000113	WO 1999-US14298	19990625
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RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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EP 1093469	A1	20010425	EP 1999-931889	19990625

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BR 9911754	A	20011106	BR 1999-11754		19990625
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			US 1998-203556	A	19981202
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			WO 1999-US14298	W	19990625

AB Linear cyclodextrin **copolymers** containing an unoxidized and/or an oxidized cyclodextrin moiety integrated into the **polymer** backbone, useful as drug delivery vehicles, were prepared For example, substitution reaction of 6A,6D-diiodo-6A,6D-deoxy-β-cyclodextrin (2-step preparation by a known procedure given) with NaSCH2CH2NH2 gave 79% 6A,6D-bis(2-aminoethylthio)-6A6D-deoxy-β-cyclodextrin. This was stirred for 18 h at 80° in DMF under N with an equiv of MeOC(:NH)(CH2)6C(:NH)OMe-2HCl in the presence of Et3N to give 18% of a title **copolymer** (CD **copolymer**). Media containing doxorubicin and CD **copolymer**-doxorubicin complex (general complexation procedure given) were applied to cultured cell lines to show no toxicity to KB or KB-VI cell lines in the absence of doxorubicin.

IC ICM C08B037-16
ICS C08G081-00; C08G069-00; C08G069-40; C08G073-02; C08G073-06; C08G075-00; A61K047-40

CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 63

ST cyclodextrin linear **copolymer** prepn drug delivery; iododeoxycyclodextrin prepn substitution aminoethylthiocyclodextrin; aminoethylthiocyclodextrin prepn **polymn** dimethylsuberimidate; doxorubicin complex aminoethylthiocyclodextrin dimethylsuberimidate **copolymer** cell toxicity

IT Drug delivery systems
(preparation of linear cyclodextrin **copolymers** as)

IT 51178-68-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid chlorination; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT 91190-86-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and conversion to diodo derivative; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT 35625-91-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and **copolymn**. with diaminocyclodextrin; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT **101652-40-8P 254912-03-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and **copolymn**.; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT **98126-99-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and redn to diamine; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT **76700-72-6P**

RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and substitution with sodium azide; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT 23214-92-8DP, Doxorubicin, complexes with cyclodextrin **copolymers**
RL: BSU (Biological study, unclassified); PNU (Preparation, unclassified); BIOL (Biological study); PREP (Preparation)
(preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT 254912-04-4P 254912-05-5DP, oxidized 254912-05-5P 254912-07-7P
254912-08-8P 254912-09-9P 254912-10-2P 254912-11-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT 7585-39-9, β-Cyclodextrin
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with biphenyldisulfonyl dichloride; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT 3406-84-6, Biphenyl-4,4'-disulfonyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with β-cyclodextrin; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

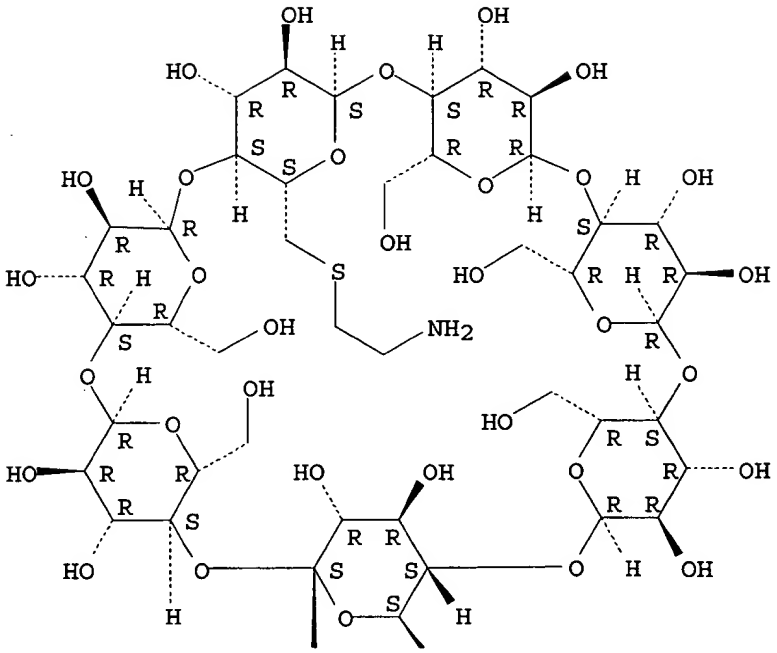
IT 51974-68-6, Sodium 2-aminoethylthiolate
RL: RCT (Reactant); RACT (Reactant or reagent)
(thioetherification of diiodocyclodextrin; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

IT **101652-40-8P 254912-03-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and **copolymn.**; preparation of linear cyclodextrin **copolymers** as drug delivery agents)

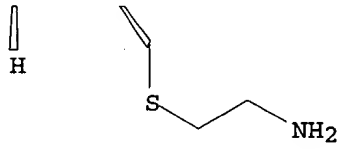
RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



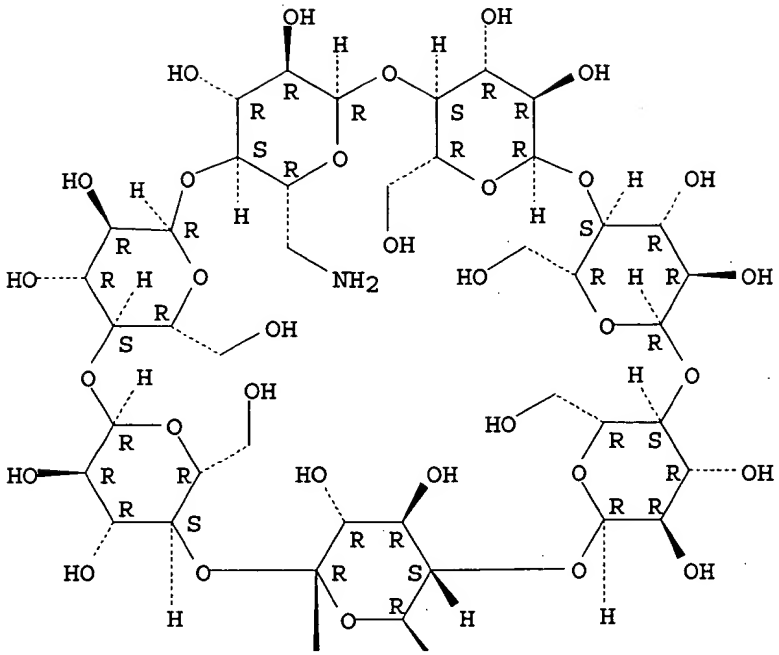
RN 254912-03-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2) (9CI) (CA INDEX NAME)

CM 1

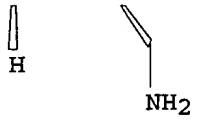
CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A

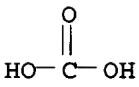


PAGE 2-A



CM 2

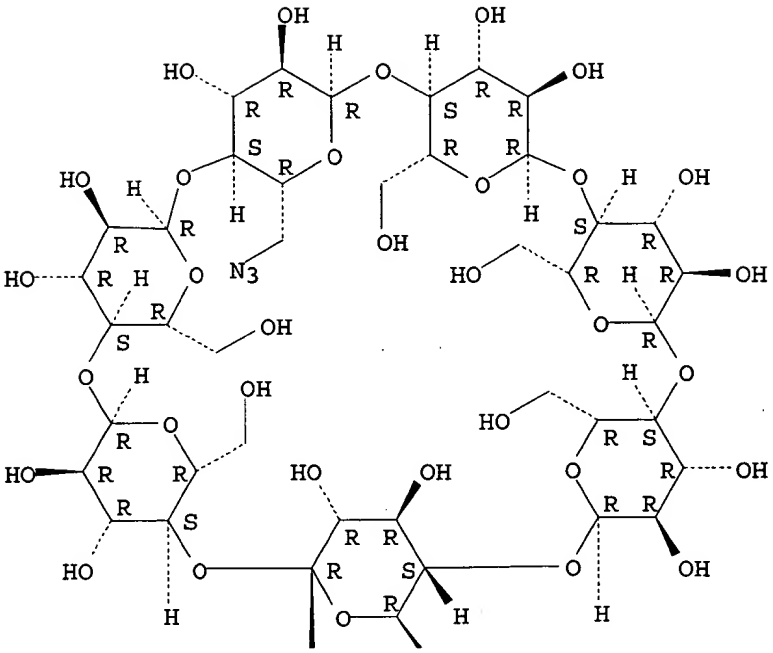
CRN 463-79-6
CMF C H2 O3



IT **98126-99-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and redn to diamine; preparation of linear cyclodextrin **copolymers** as drug delivery agents)
RN 98126-99-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diazido-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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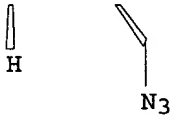
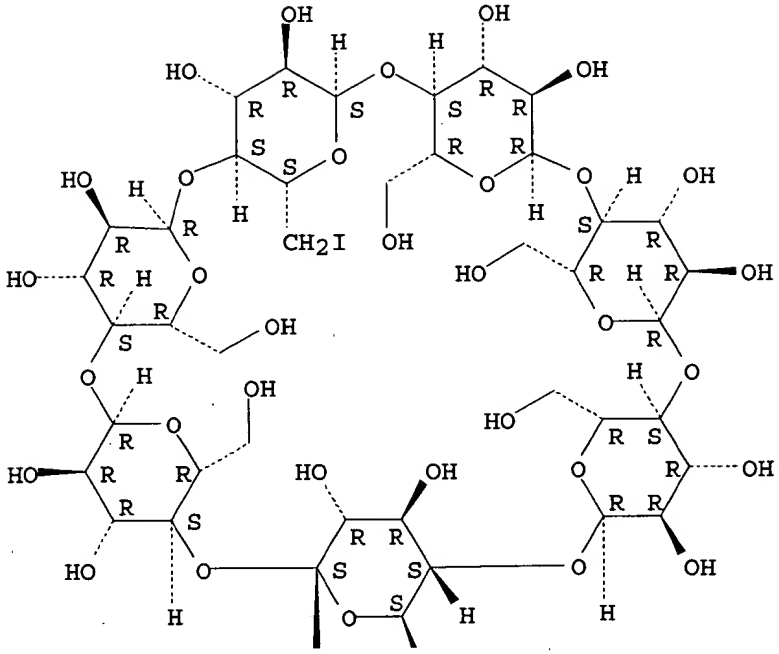


IT **76700-72-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and substitution with sodium azide; preparation of linear cyclodextrin **copolymers** as drug delivery agents)
RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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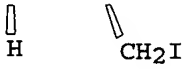


REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:607456 HCAPLUS
DOCUMENT NUMBER: 132:26733
TITLE: New Class of **Polymers** for the Delivery of Macromolecular Therapeutics
AUTHOR(S): Gonzalez, Hector; Hwang, Sue Jean; Davis, M. E.
CORPORATE SOURCE: Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA
SOURCE: Bioconjugate Chemistry (1999), 10(6), 1068-1074
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cationic **polymers** show promise for the in vitro and in vivo delivery of macromol. therapeutics. Known cationic **polymers**, e.g., poly(L)lysine (PLL) and polyethylenimine (PEI), have been employed in native and modified forms for the delivery of plasmid DNA (pDNA) and reveal varying levels of toxicity. Here, we report the preparation of a new class of cationic **polymers** that are specifically designed to

deliver macromol. therapeutics. Linear, cationic, β-cyclodextrin (β-CD)-containing **polymers** (CD-**polymers**) are synthesized by **copolymg**. difunctionalized β-CD monomers (AA) with other difunctionalized comonomers (BB) such that an AABBAABB product is formed. The β-CD **polymers** are able to bind .apprx.5 kbp pDNA above **polymer** to DNA (±) charge ratios of 1.5, compact the bound pDNA into particles of approx. 100-150 nm in size at charge ratios above ±5, and transfect cultured cells at charge ratios above ±10. In vitro transfections with the new β-CD-**polymers** are comparable to the best results obtained in our hands with PEI and Lipofectamine. Some cell line-dependent toxicities are observed for serum-free transfections; however, no toxicity is revealed at charge ratios as high as ±70- in transfections conducted in 10% serum. Single IV and IP doses as high as 200 mg/kg in mice showed no mortalities.

CC 63-5 (Pharmaceuticals)

ST cyclodextrin cationic **polymer** macromol delivery

IT DNA
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(binding; cyclodextrin cationic **polymers** for macromols. delivery)

IT DNA
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(complexes; cyclodextrin cationic **polymers** for macromols. delivery)

IT Drug delivery systems
Transformation, genetic
(cyclodextrin cationic **polymers** for macromols. delivery)

IT 29878-26-0DP, Dimethylsuberimidate, alternating **copolymers** with β-cyclodextrin derivs. 57757-57-0DP, alternating **copolymers** with β-cyclodextrin derivs. **101652-40-8DP**, alternating **copolymers** with dimethylsuberimidate **162825-08-3DP**, alternating **copolymers** with dimethylsuberimidate and with dithiobis(succinimidyl propionate)
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); **RACT (Reactant or reagent)**; USES (Uses)
(cyclodextrin cationic **polymers** for macromols. delivery)

IT **101652-40-8 162825-08-3**, 6A,6D-Diamino-6A,6D-dideoxy-β-cyclodextrin
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(cyclodextrin cationic **polymers** for macromols. delivery)

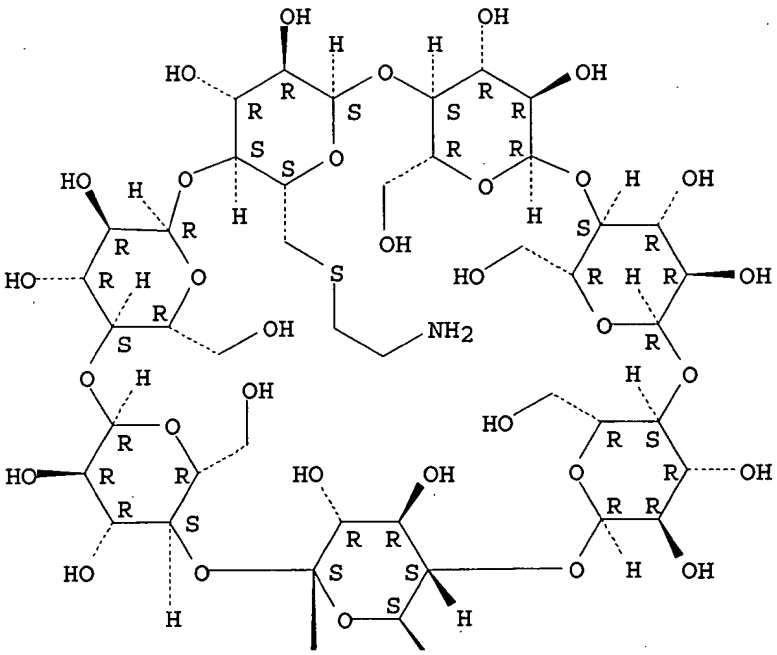
IT **101652-40-8DP**, alternating **copolymers** with dimethylsuberimidate **162825-08-3DP**, alternating **copolymers** with dimethylsuberimidate and with dithiobis(succinimidyl propionate)
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); **RACT (Reactant or reagent)**; USES (Uses)
(cyclodextrin cationic **polymers** for macromols. delivery)

RN 101652-40-8 HCAPLUS

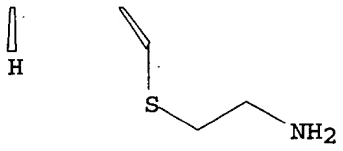
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



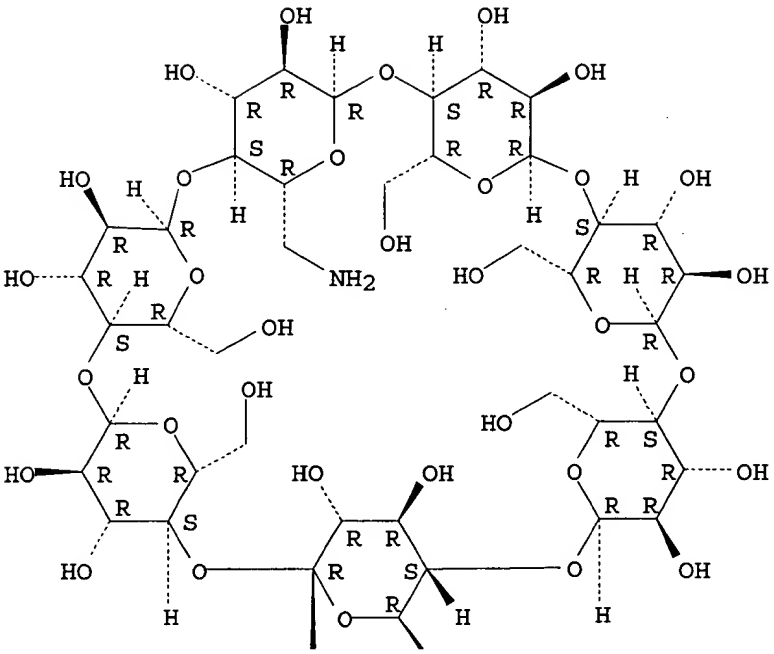
PAGE 2-A



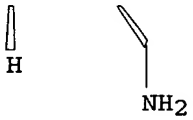
RN 162825-08-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



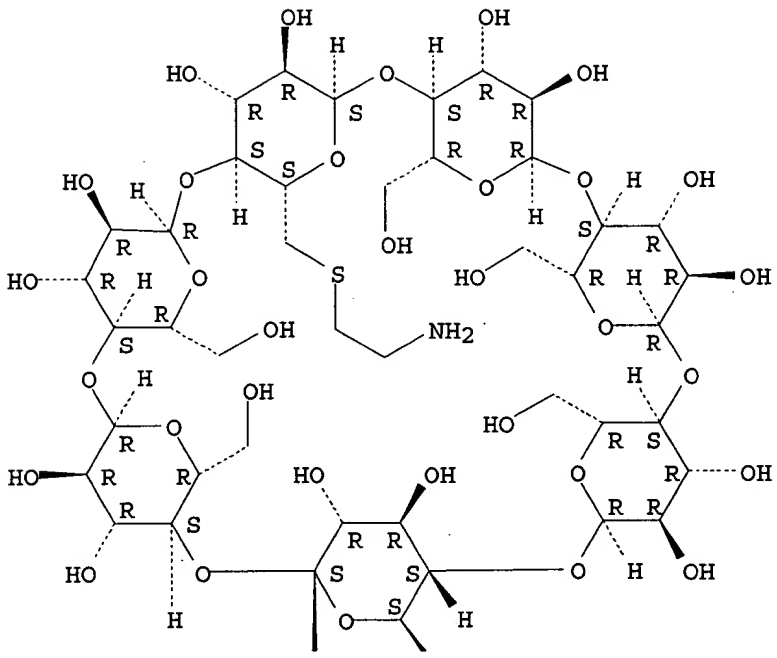
PAGE 2-A



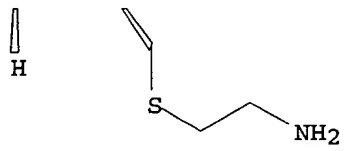
IT **101652-40-8 162825-08-3**, 6A,6D-Diamino-6A,6D-dideoxy-β-cyclodextrin
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(cyclodextrin cationic **polymers** for macromols. delivery)
RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



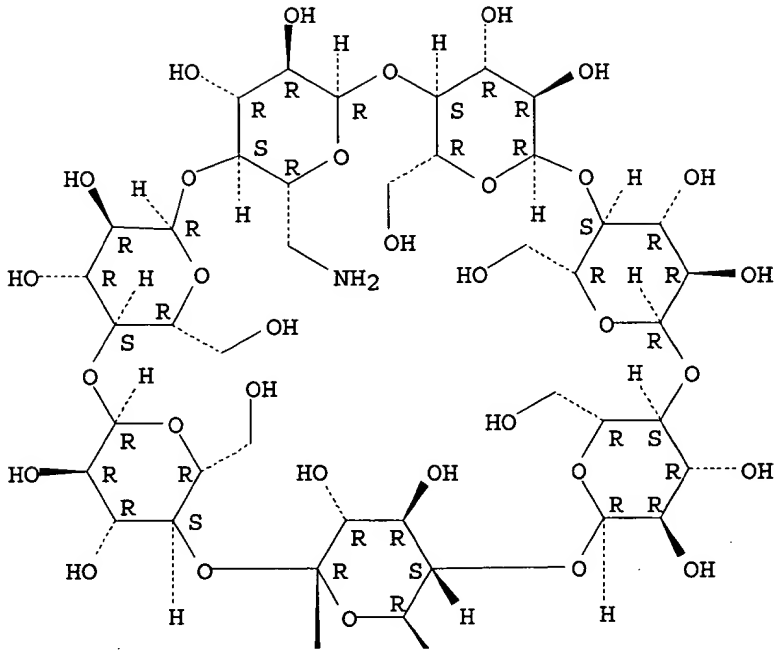
PAGE 2-A



RN 162825-08-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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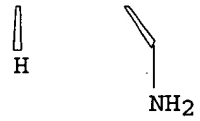


REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L55 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:573195 HCAPLUS
DOCUMENT NUMBER: 132:141784
TITLE: Methods to enhance the complexation efficiency of cyclodextrins
AUTHOR(S): Loftsson, T.; Masson, M.; Sigurjonsdottir, J. F.
CORPORATE SOURCE: Department of Pharmacy, University of Iceland, Reykjavik, 127, Iceland
SOURCE: S.T.P. Pharma Sciences (1999), 9(3), 237-242
CODEN: STSSE5; ISSN: 1157-1489
PUBLISHER: Editions de Sante
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In general, the complexation efficiency of cyclodextrins is rather low, and thus relatively large amts. of cyclodextrins are needed to complex small amts. of a drug. In addition, various pharmaceutical additives decrease the efficiency even further. Meanwhile, due to toxicol. considerations, formulation bulk and production cost, it is important to use as little cyclodextrin as possible in pharmaceutical prepns. Several

different methods, which can be applied in order to enhance the complexation efficiency of cyclodextrins, were evaluated. A sugaring-in effect could not be observed in aqueous cyclodextrin solns. **Polymers**, and other rheol. agents, increase the complexation efficiency by increasing the apparent stability constant of the drug/cyclodextrin complex. Ionization of a drug mol. sometimes increases the complexation efficiency by increasing the intrinsic solubility of the drug. Finally, enhanced complexation efficacy can be obtained by forming a more water-soluble drug derivative of a water-insol. drug (i.e. prodrug with higher intrinsic solubility than the parent drug).

CC 63-5 (Pharmaceuticals)

IT 57-55-6D, 1,2-Propanediol, ether with β-cyclodextrin, reactions
7585-39-9D, β-Cyclodextrin, ethers 9000-01-5, Gum acacia
9003-39-8, Pvp 9004-54-0, Dextran, reactions 9004-65-3, Hpmc
9004-67-5, Methyl cellulose 17465-86-0, γ-Cyclodextrin
31465-25-5D, 1-Butanesulfonic acid, 4-hydroxy-, monosodium salt, ether with β-cyclodextrin 104723-60-6, Maltosyl-β-cyclodextrin
107035-66-5, Dimaltosyl-β-cyclodextrin
RL: PRP (Properties); **RCT (Reactant)**; **RACT (Reactant or reagent)**
(methods to enhance the complexation efficiency of cyclodextrins)

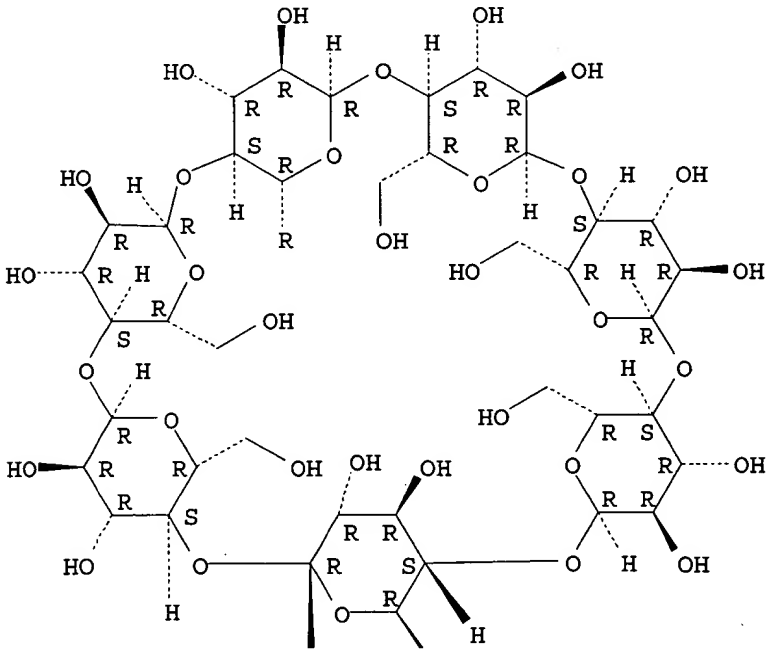
IT **107035-66-5**, Dimaltosyl-β-cyclodextrin
RL: PRP (Properties); **RCT (Reactant)**; **RACT (Reactant or reagent)**
(methods to enhance the complexation efficiency of cyclodextrins)

RN 107035-66-5 HCAPLUS

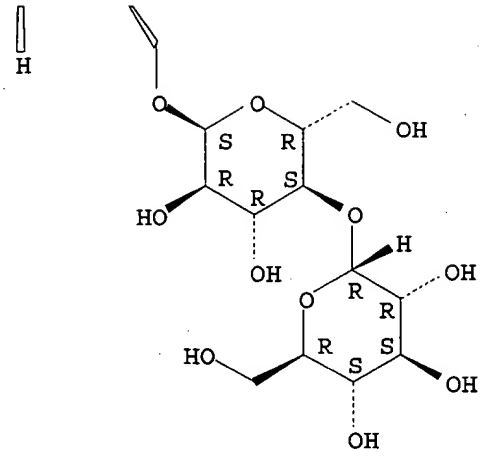
CN β-Cyclodextrin, O-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→6A)-O-[O-α-D-glucopyranosyl-(1→4)-α-D-glucopyranosyl-(1→6D)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



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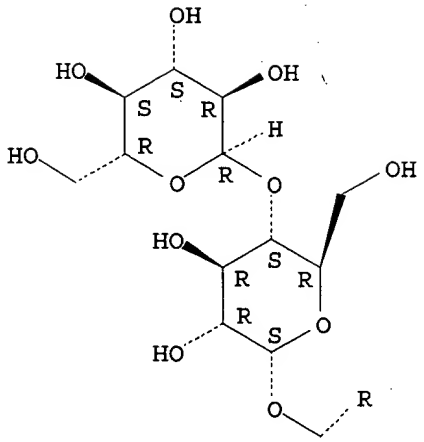

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L55 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:336115 HCAPLUS
DOCUMENT NUMBER: 122:240230
TITLE: Molecular recognition by cyclodextrin dimers
AUTHOR(S): Breslow, Ronald; Halfon, Sherin; Zhang, Biliang
CORPORATE SOURCE: Dep. of Chemistry, Columbia Univ., New York, NY, 10027, USA
SOURCE: Tetrahedron (1995), 51(2), 377-88
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cyclodextrin dimers strongly bind substrates with the correct geometry in water solution Studies with antihydrophobic agents help clarify the factors involved.

CC 33-5 (Carbohydrates)

IT **Polymers**, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(cyclodextrin group-containing, cyclodextrin dimers; mol. recognition by cyclodextrin dimers)

IT 6240-11-5, 2-(1-Adamantyl)ethanol 94827-13-1 **96761-41-0**
123290-02-8 123307-79-9 130860-88-7 152310-62-8 162158-20-5
162158-21-6 162190-57-0 162190-60-5
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(mol. recognition by cyclodextrin dimers)

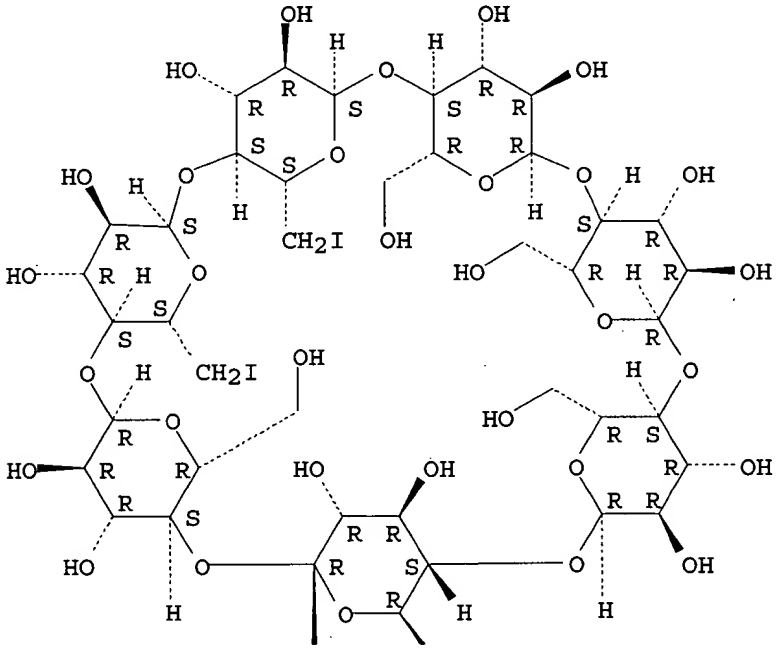
IT **96761-41-0**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(mol. recognition by cyclodextrin dimers)

RN 96761-41-0 HCAPLUS

CN β-Cyclodextrin, 6A,6B-dideoxy-6A,6B-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

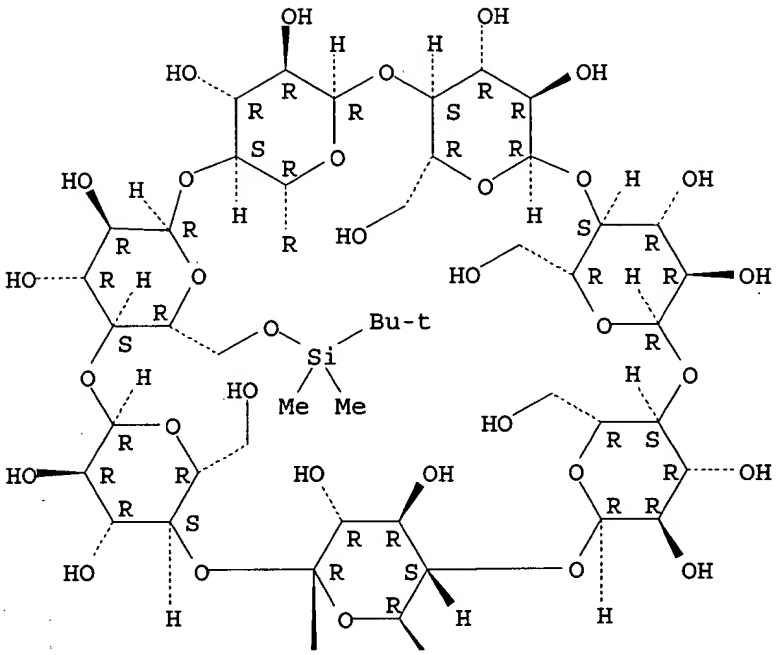
L55 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:559565 HCAPLUS
DOCUMENT NUMBER: 115:159565
TITLE: Characterization of five isomers of branched cyclomaltoheptaose (β CD) having degree of **polymerization** (d.p.) = 9: reinvestigation of three positional isomers of diglucosyl-β CD
AUTHOR(S): Koizumi, Kyoko; Tanimoto, Toshiko; Okada, Yasuyo; Nakanishi, Noriko; Kato, Nagako; Takagi, Yosuke; Hashimoto, Hitoshi
CORPORATE SOURCE: Fac. Pharm. Sci., Mukogawa Women's Univ., Nishinomiya, 663, Japan
SOURCE: Carbohydrate Research (1991), 215(1), 127-36
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English

AB It has been confirmed by methylation analyses and chemical syntheses that three isomers of branched cyclomaltoheptaose isolated from the mother liquors of a large-scale preparation of β-CD with Bacillus ohbensis cyclomaltodextrin glucanotransferase are 61,64-di-O-(α-D-glucopyranosyl)-cyclomaltoheptaose, 61,63-di-O-(α-D-glucopyranosyl)-cyclomaltoheptaose, and 6-O-(α-isomaltosyl)-cyclomaltoheptaose instead of 61,62-di-O-(α-D-glucopyranosyl)-cyclomaltoheptaose (I), which was erroneously characterized in an earlier paper. I has been newly isolated from a glucosyl-β-CD mixture prepared by hydrolysis with glucoamylase of a maltosyl-β-CD mixture, synthesized from maltose and β-CD through the reverse action of pullulanase. 6-O-(α-Maltosyl)-cyclomaltoheptaose was prepared by the reverse action of hydrolytic enzymes.

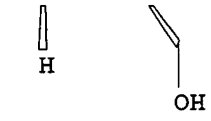
CC 33-5 (Carbohydrates)
IT **130925-49-4**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(acetylation and desilylation of)
IT **130925-49-4**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(acetylation and desilylation of)
RN 130925-49-4 HCAPLUS
CN β-Cyclodextrin, 6A,6B-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

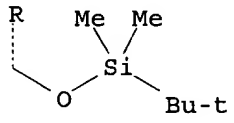
Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

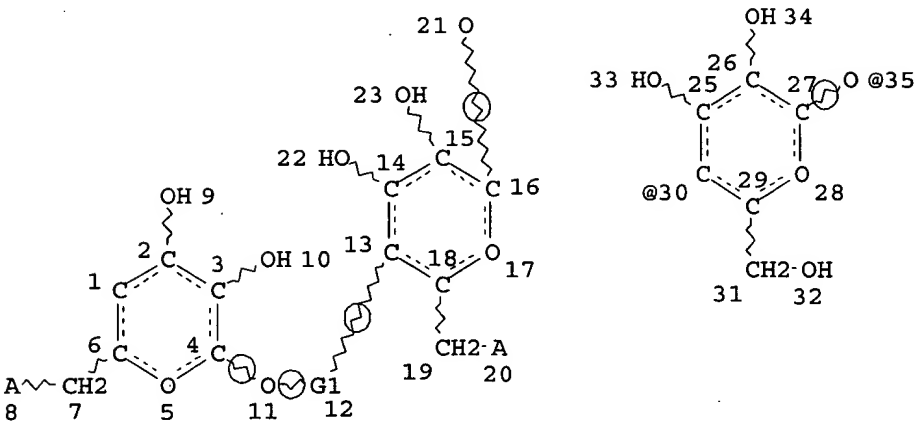




Cyclodextrin reaction sites + text (linear polymer)

3/8

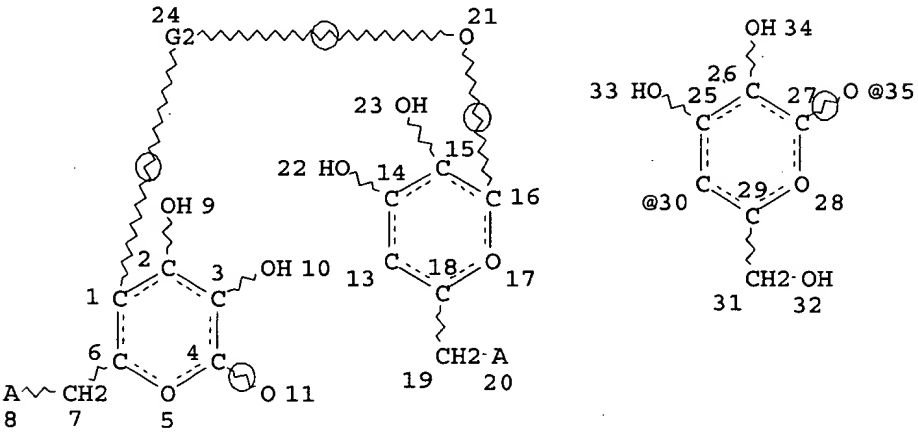
=> d que l31
L4 STR



REP G1=(0-3) 30-11 35-13
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE
L6 21339 SEA FILE=REGISTRY SSS FUL L4
L7 STR

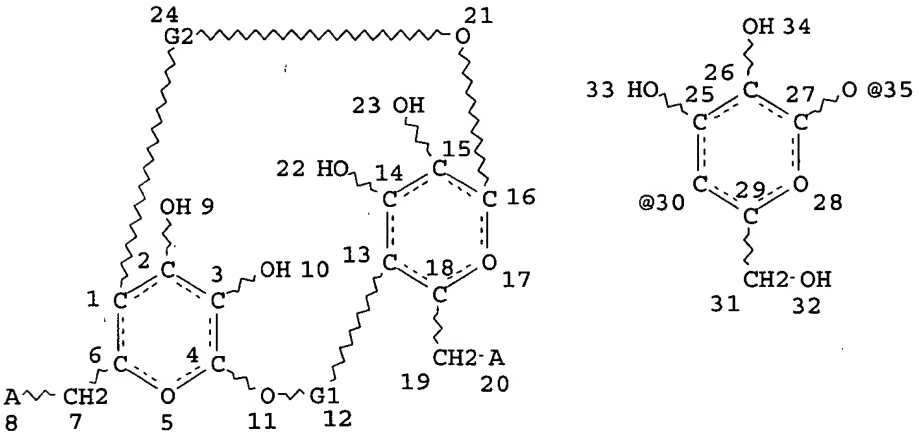


REP G2=(2-6) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE

L9 19801 SEA FILE=REGISTRY SUB=L6 SSS FUL L7
L11 STR



REP G1=(0-3) 30-11 35-13
REP G2=(2-4) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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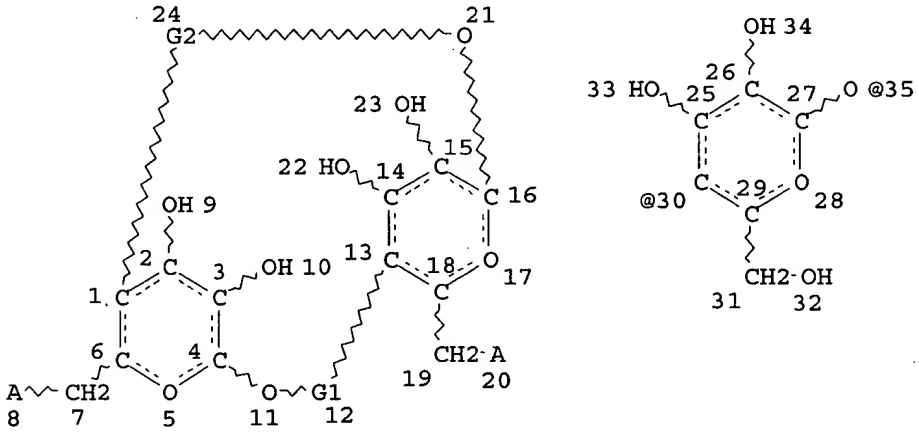
L14 STR



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REP G2=(5-6) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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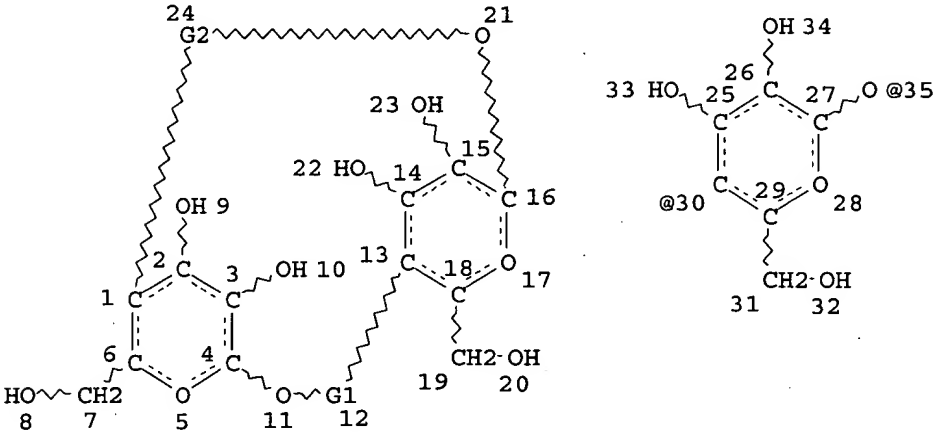
L16 17980 SEA FILE=REGISTRY ABB=ON PLU=ON L13 OR L15
L17 STR



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REP G2=(2-4) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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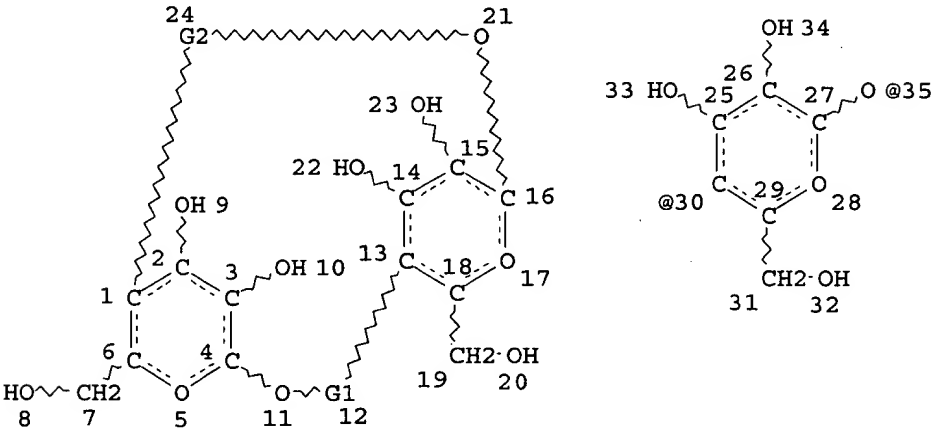
L19 STR



REP G1=(0-3) 30-11 35-13
REP G2=(5-6) 30-21 35-1
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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L21 12511 SEA FILE=REGISTRY ABB=ON PLU=ON L18 OR L20
L22 5469 SEA FILE=REGISTRY ABB=ON PLU=ON L16 NOT L21
L29 806 SEA FILE=HCAPLUS ABB=ON PLU=ON L22(L)(RACT OR RCT OR RGT)/RL

L31 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND LINEAR?(3A)?POLYMER?

=> d l31 ibib abs hitind hitstr 1-5

L31 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:789443 HCAPLUS
DOCUMENT NUMBER: 140:16882
TITLE: Supra-Molecular Self-Assemblies of β-Cyclodextrins with Aromatic Tethers: Factors Governing the Helical Columnar versus Linear Channel Super-Structures
AUTHOR(S): Liu, Yu; Fan, Zhi; Zhang, Heng-Yi; Yang, Ying-Wei; Ding, Fei; Liu, Shuang-Xi; Wu, Xue; Wada, Takehiko; Inoue, Yoshihisa
CORPORATE SOURCE: Department of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin, 300071, Peop. Rep. China
SOURCE: Journal of Organic Chemistry (2003), 68(22), 8345-8352
CODEN: JOCEAH; ISSN: 0022-3263
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:16882
AB A series of 6-O-(p-substituted phenyl)-modified β-cyclodextrin derivs., i.e., 6-O-(4-bromophenyl)-β-CD (1), 6-O-(4-nitrophenyl)-β-CD (2), 6-O-(4-formylphenyl)-β-CD (3), 6-phenylselenyl-6-deoxy-β-CD (4), and 6-O-(4-hydroxybenzoyl)-β-CD (5), were synthesized, and their inclusion complexation behavior in aqueous solution and self-assembling behavior in the solid state were comparatively studied by NMR spectroscopy, micro-calorimetry, crystallog., and scanning tunneling microscopy. Interestingly, (seleno)ethers 1-4 and ester 5 displayed distinctly different self-assembling behavior in the solid state, affording a successively threading head-to-tail polymeric helical structure for the (seleno)ethers or a mutually penetrating tail-to-tail dimeric columnar channel structure for the ester. Combining the present and previous structures reported for the relevant β-CD derivs., we further deduce that the pivot hetero-atom, through which the aromatic substituent is tethered to β-CD, plays a critical role in determining the helix structure, endowing the 2-fold and 4-fold axes to the N/O- and S/Se-pivoted β-CD aggregates, resp. This means that one can control the self-assembling orientation, alignment, and helicity in the solid state by finely tuning the pivot atom and the tether length. Further NMR and calorimetric studies on the self-assembling behavior in aqueous solution revealed that the dimerization step is the key to the formation of **linear polymeric** supramol. architecture, which is driven by favorable entropic contributions.
CC 33-4 (Carbohydrates)
Section cross-reference(s): 22, 69, 75
IT **140874-31-3**

RL: PRP (Properties); **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation, inclusion reaction, and supramol. self-assemblies of β-cyclodextrins with aromatic tethers and factors governing helical columnar vs. linear channel super-structures)

IT **500757-70-0P 629652-79-5P 629652-80-8P 629652-81-9P**
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation, inclusion reaction, and supramol. self-assemblies of β-cyclodextrins with aromatic tethers and factors governing helical columnar vs. linear channel super-structures)

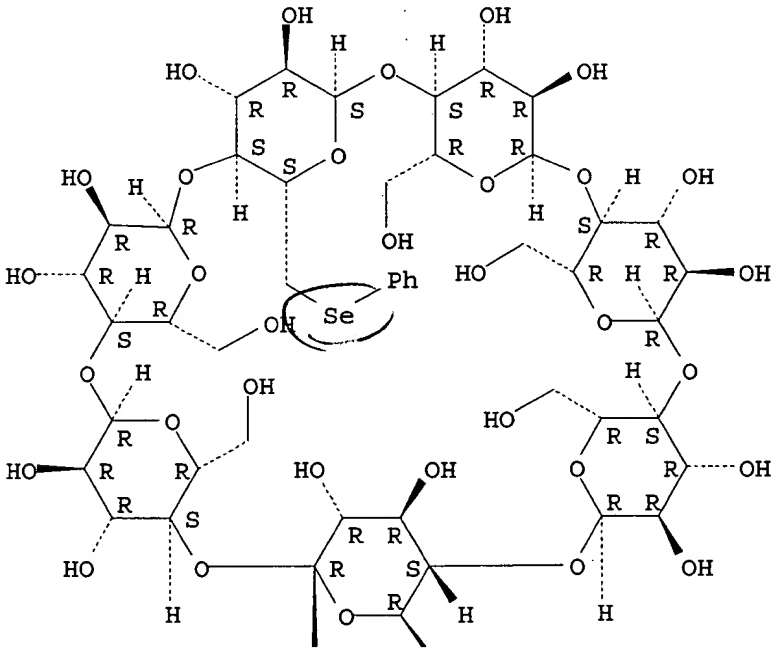
IT 99-96-7, 4-Hydroxybenzoic acid, reactions 100-02-7, 4-Nitrophenol, reactions 106-41-2, 4-Bromophenol 123-08-0, 4-Hydroxybenzaldehyde 7585-39-9, β-Cyclodextrin **67217-55-4**
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation, inclusion reaction, and supramol. self-assemblies of β-cyclodextrins with aromatic tethers and factors governing helical columnar vs. linear channel super-structures)

IT **140874-31-3**
RL: PRP (Properties); **RCT (Reactant)**; **RACT (Reactant or reagent)**
(preparation, inclusion reaction, and supramol. self-assemblies of β-cyclodextrins with aromatic tethers and factors governing helical columnar vs. linear channel super-structures)

RN 140874-31-3 HCAPLUS
CN β-Cyclodextrin, 6A-Se-phenyl-6A-seleno- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

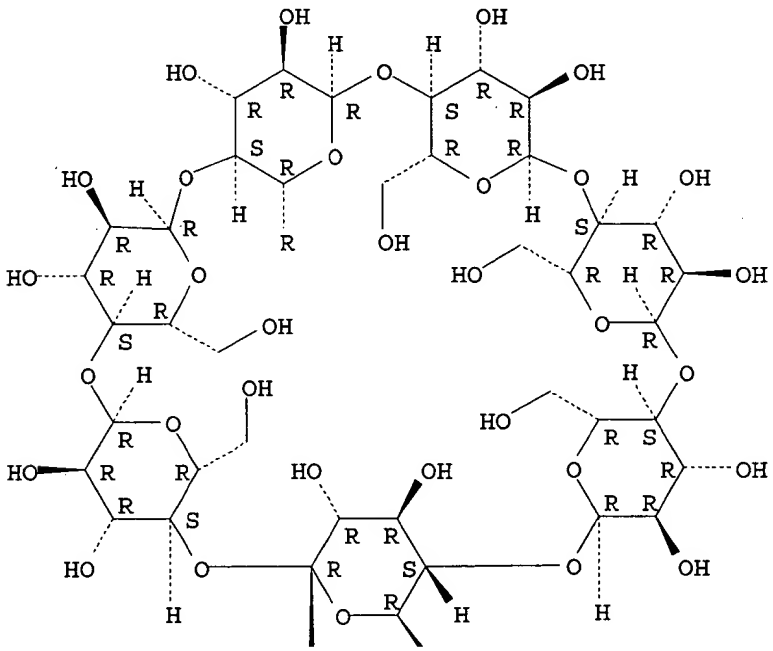


PAGE 2-A

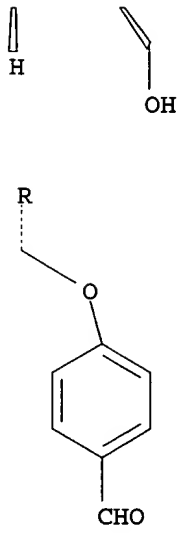
IT **500757-70-0P 629652-79-5P 629652-80-8P**
629652-81-9P
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation, inclusion reaction, and supramol. self-assemblies of β-cyclodextrins with aromatic tethers and factors governing helical columnar vs. linear channel super-structures)
RN 500757-70-0 HCAPLUS
CN β-Cyclodextrin, 6A-O-(4-formylphenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



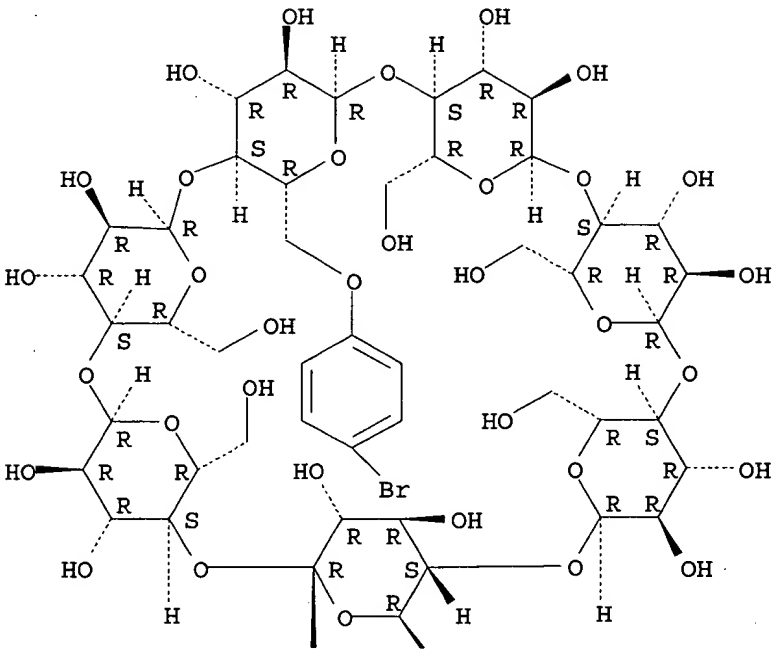
PAGE 2-A



RN 629652-79-5 HCAPLUS
CN β-Cyclodextrin, 6A-O-(4-bromophenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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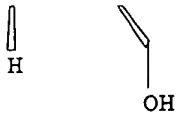
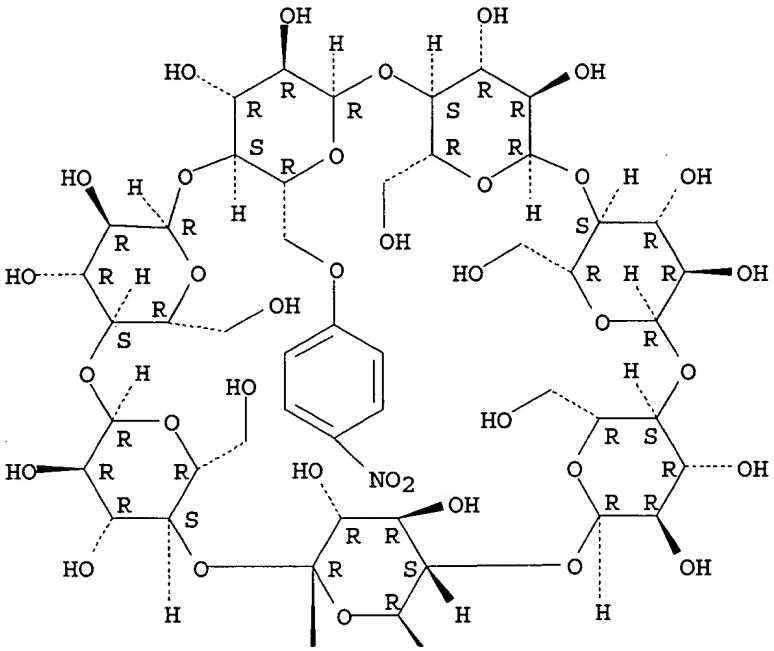


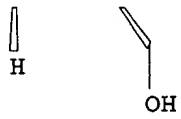
RN 629652-80-8 HCAPLUS
CN β-Cyclodextrin, 6A-O-(4-nitrophenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



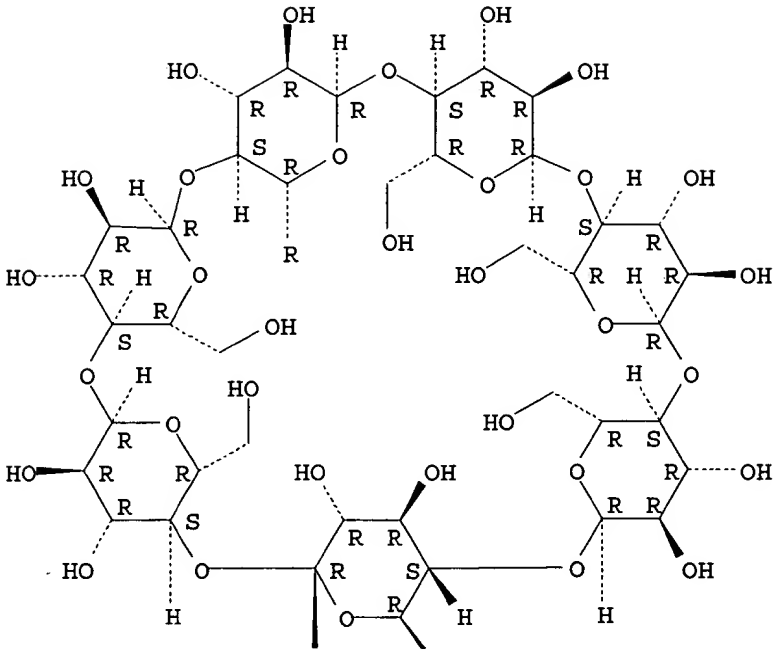
PAGE 2-A



RN 629652-81-9 HCAPLUS
CN β-Cyclodextrin, 6A-(4-hydroxybenzoate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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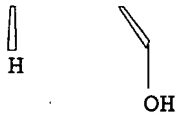
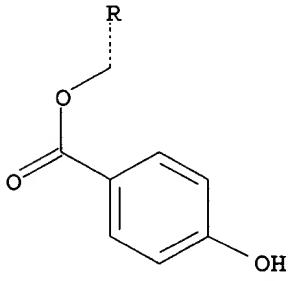
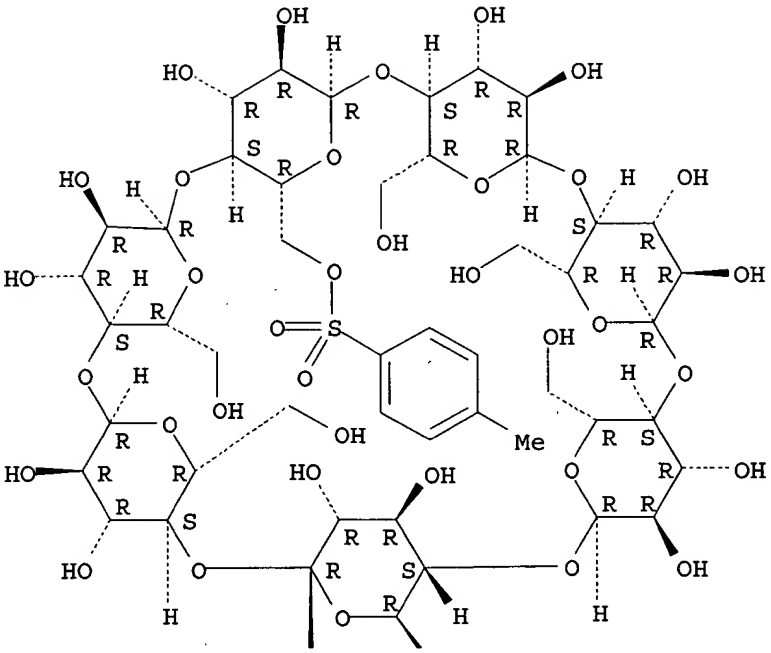




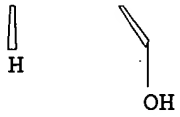
IT **67217-55-4**
RL: **RCT (Reactant); RACT (Reactant or reagent)**
(preparation, inclusion reaction, and supramol. self-assemblies of β-cyclodextrins with aromatic tethers and factors governing helical columnar vs. linear channel super-structures)
RN 67217-55-4 HCAPLUS
CN β-Cyclodextrin, 6A-(4-methylbenzenesulfonate) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:666072 HCAPLUS
DOCUMENT NUMBER: 139:328131
TITLE: Synthesis of **Linear**, β-Cyclodextrin-Based **Polymers** and Their Camptothecin Conjugates
AUTHOR(S): Cheng, Jianjun; Khin, Kay T.; Jensen, Gregory S.; Liu, Aijie; Davis, Mark E.
CORPORATE SOURCE: Insert Therapeutics, Inc., Pasadena, CA, 91107, USA
SOURCE: Bioconjugate Chemistry (2003), 14(5), 1007-1017
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 6A,6D-Bis-(2-amino-2-carboxylethylthio)-6A,6D-dideoxy-β-cyclodextrin 1, a diamino acid derivative of β-cyclodextrin, is synthesized and condensed with difunctionalized PEG comonomers to give linear, high mol. weight (Mw over 50 kDa) β-cyclodextrin-based polymers (2-4) with pendant functionality (carboxylate). 2-4 Are all highly soluble in aqueous solns.
(over

200 mg/mL). 20-O-trifluoroglycinylcamptothecin, 5a, and 20-O-trifluoroglycinylglycinylglycinylcamptothecin, 5b, are synthesized and conjugated to 2 to give polymer-camptothecin (CPT) prodrugs. The solubility of CPT is increased by more than three orders of magnitude when it is conjugated to 2. The rates of CPT release from the conjugates HGGG6 (high mol. weight polymer (Mw 97 kDa), glyglygly linker and 6 wt % CPT loading) and HG6 (high MW polymer (Mw 97 kDa), gly linker and 6 wt % CPT loading) in either mouse or human plasma are dramatically accelerated over the rates of pure hydrolysis at pH = 7.4, indicating the presence of enzymic cleavage as a rate-determining step at this pH in the release of the CPT. The pH of aqueous solution has a large effect on hydrolysis rate of CPT from HGGG6 and HG6; the lower the pH, the slower the rate in the range at $4.1 \leq pH \leq 13.1$. The IC50's of polymer 2e, CPT, and the CPT conjugates HG6 and HGGG6 are found to be cell-line dependent with LS174T, HT29, A2780, and PC3 cells using in vitro MTT assays. The parent polymer 2e has very low toxicity to all cultured cells tested.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 35

IT Human
(A2780 cell line; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Animal cell line
(HT-29; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Animal cell line
(LS174T; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Animal cell line
(PC-3; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Polyoxyalkylenes, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Polyamides, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyoxyalkylene-; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Drug delivery systems
(prodrugs; synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT Antitumor agents
Dissolution
Hydrolysis
Stability
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT 204133-74-4DP, reaction products with cyclodextrin polyamides
362496-98-8DP, reaction products with cyclodextrin polyamides
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT 7689-03-4, 20(S)-Camptothecin
RL: PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)

(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT **614744-05-7DP**, camptothecin conjugate derivs. **614744-06-8P** **614744-08-0P** **614744-10-4P**
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT 52-90-4, L-Cysteine, reactions 4530-20-5 28320-73-2 34079-22-6 123502-57-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT **76700-72-6P** 204133-74-4P 362496-98-8P **614744-04-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

IT **614744-05-7DP**, camptothecin conjugate derivs. **614744-06-8P** **614744-08-0P** **614744-10-4P**
RL: PRP (Properties); **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)

RN 614744-05-7 HCAPLUS

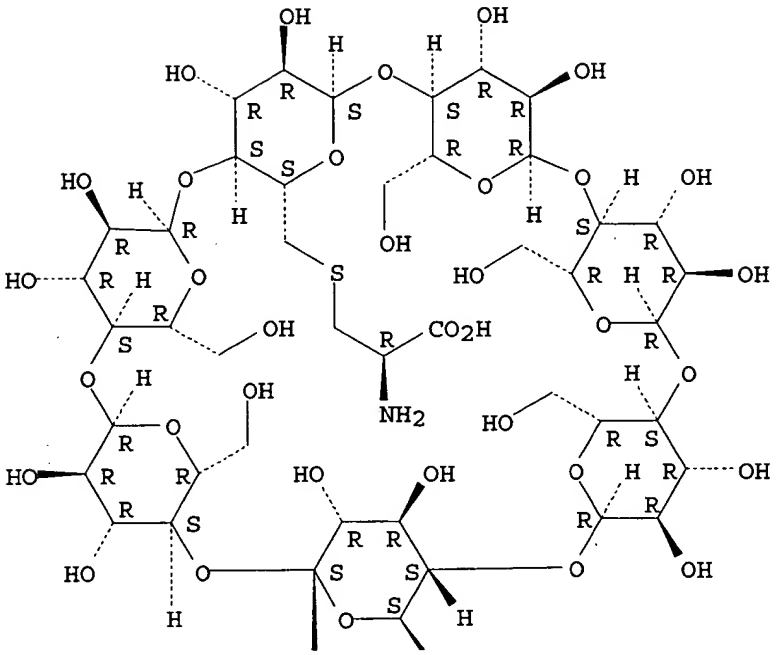
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-ω-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropoxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

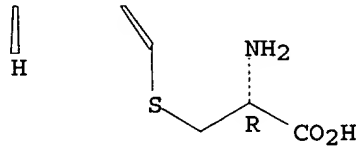
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A



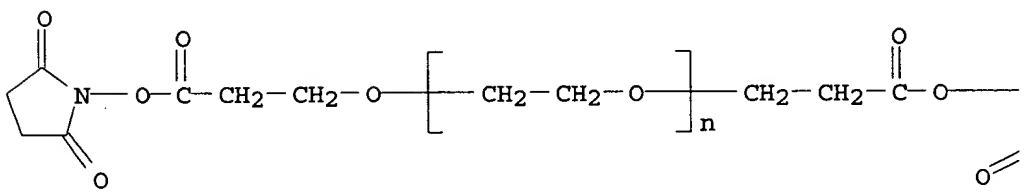
PAGE 2-A



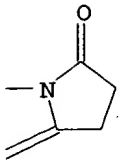
CM 2

CRN 123502-57-8
CMF (C2 H4 O)n C14 H16 N2 O9
CCI PMS

PAGE 1-A



PAGE 1-B



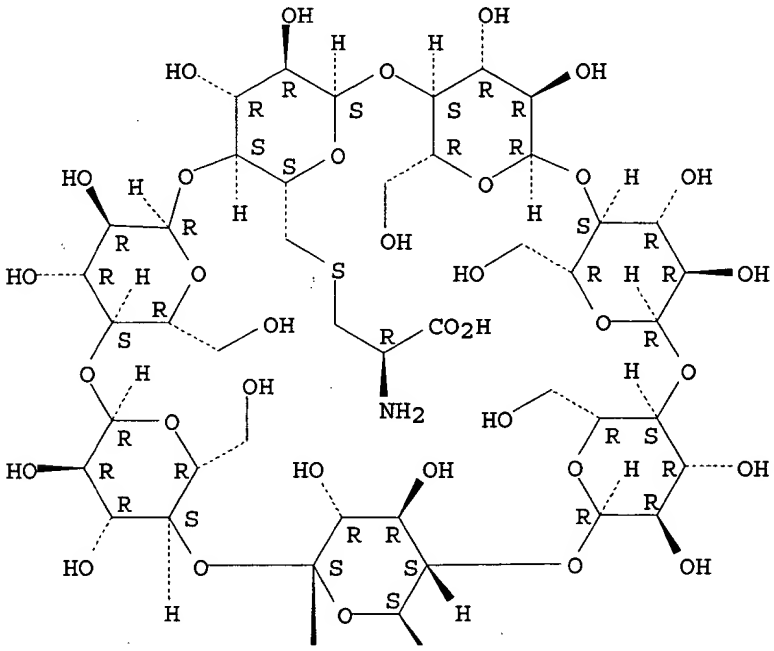
RN 614744-06-8 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-ω-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutoxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

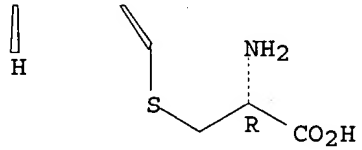
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A

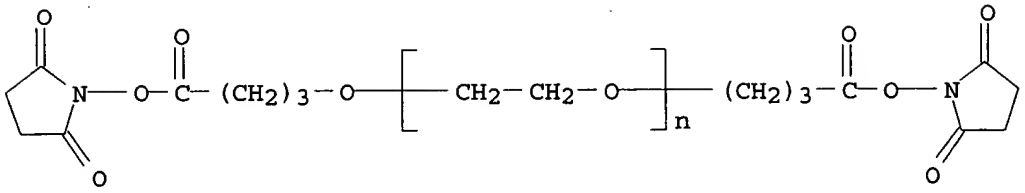


PAGE 2-A



CM 2

CRN 159194-63-5
CMF (C2 H4 O)n C16 H20 N2 O9
CCI PMS



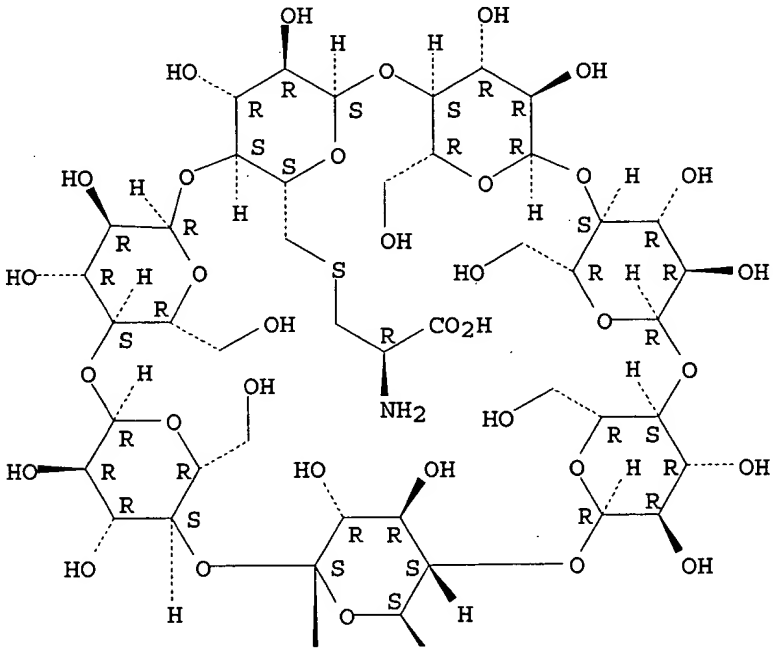
RN 614744-08-0 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[(1H-benzotriazol-1-yloxy)carbonyl]-ω-[[(1H-benzotriazol-1-yloxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A



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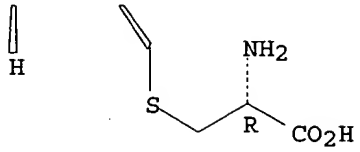
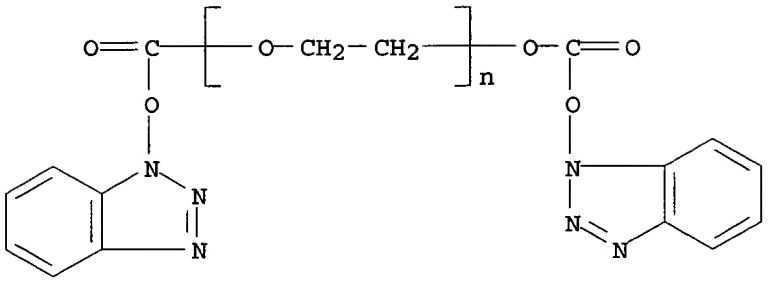


CM 2

CRN 178676-34-1
CMF (C2 H4 O)n C14 H8 N6 O5
CCI PMS



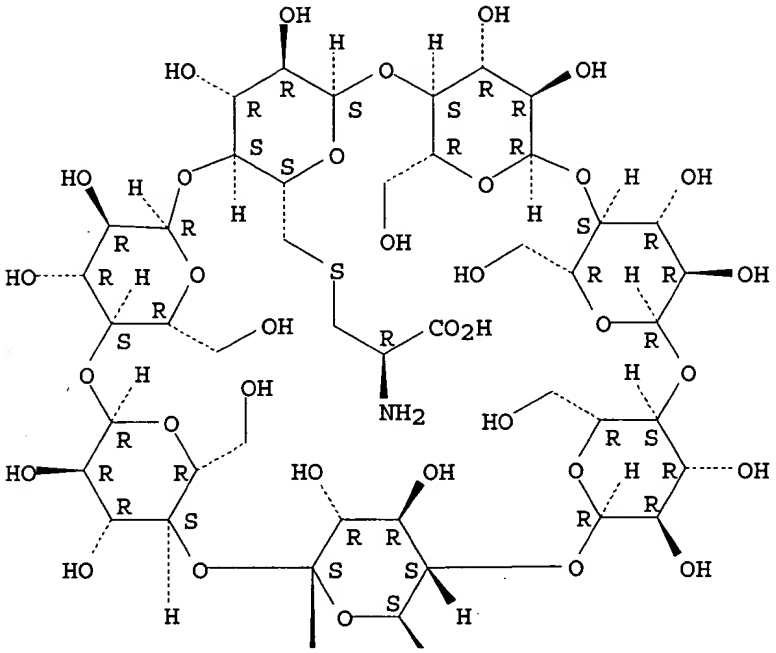
RN 614744-10-4 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis-, polymer with α-[(4-nitrophenoxy)carbonyl]-ω-[[(4-nitrophenoxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

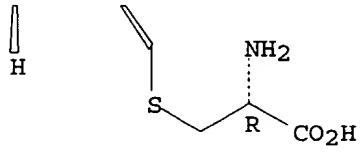
CRN 614744-04-6
CMF C48 H80 N2 O37 S2

Absolute stereochemistry.

PAGE 1-A

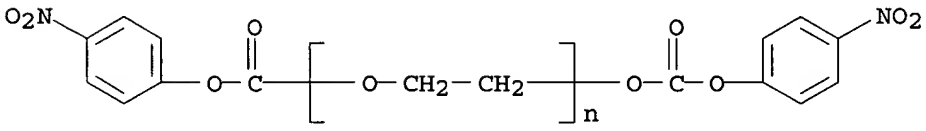


PAGE 2-A



CM 2

CRN 150673-50-0
CMF (C2 H4 O)n C14 H8 N2 O9
CCI PMS

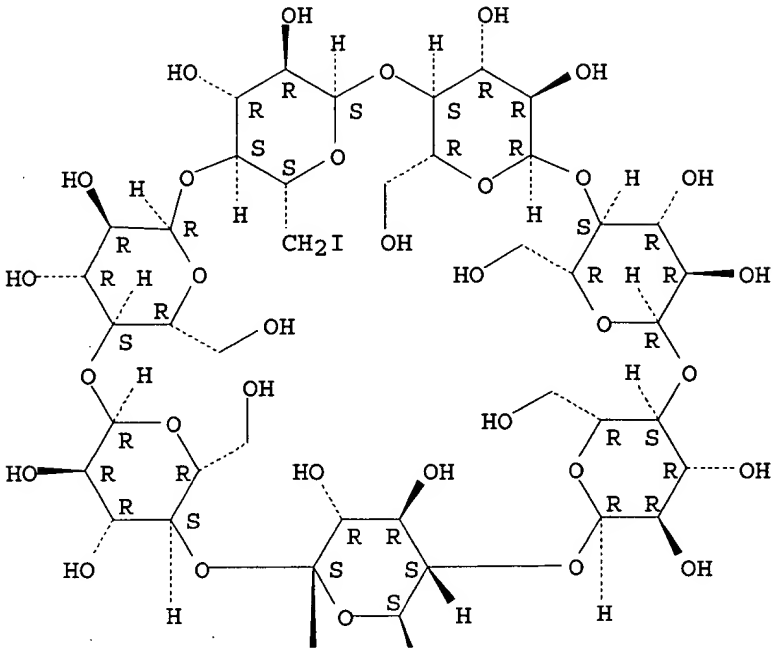


IT **76700-72-6P 614744-04-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis of **linear**, β-Cyclodextrin-based **polymers** and their camptothecin conjugates)
RN 76700-72-6 HCAPLUS

CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

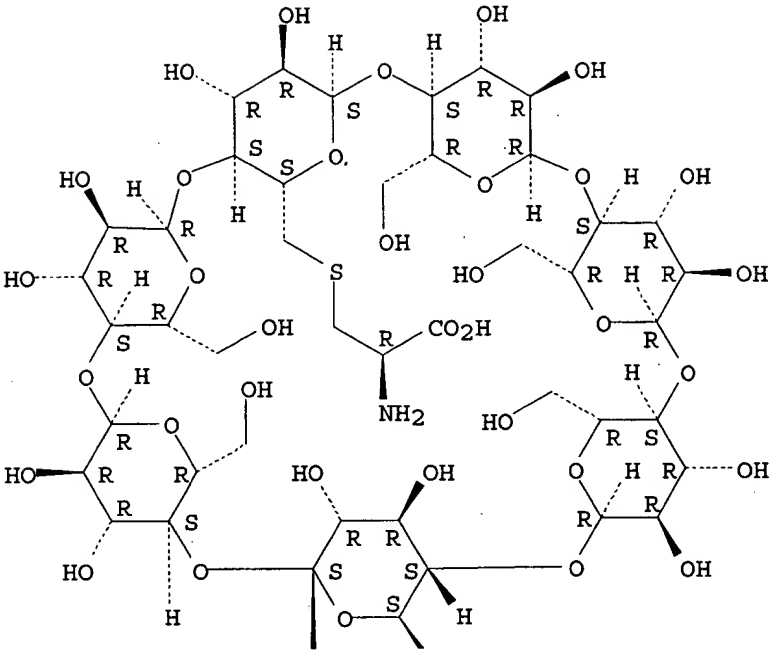


PAGE 2-A

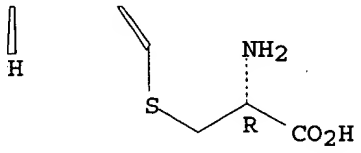
RN 614744-04-6 HCAPLUS
CN L-Cysteine, S,S'-(6A,6D-dideoxy-β-cyclodextrin-6A,6D-diyl)bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:167523 HCAPLUS
DOCUMENT NUMBER: 138:207334
TITLE: Linear tube-shaped nitrated cyclodextrin polymers for encapsulation of nitramine explosives
INVENTOR(S): Ruebner, Anja; Statton, Gary L.; Consaga, John P.
PATENT ASSIGNEE(S): Mach I, Inc., USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6527887	B1	20030304	US 2002-52430	20020118
PRIORITY APPLN. INFO.:			US 2002-52430	20020118

AB Linear tube-shaped nitrated cyclodextrin polymers, with mol. wts. 2000-50,000 and containing 10-20% nitrogen, are prepared from α-, β-, and γ-cyclodextrin starting materials that are connected by bifunctional linking groups, of general structures -O-X-(A)-Y-O- (X and Y are independently -CH-, a chain of -CH2- or Ph groups, and A = H, OH, NH2, CO2H, or -CH3) and -[X-Z(Xn-Y)m]p (X = -CH2-, Z = -CH-, Y = NH2, CO2H, and OH; n = 0-1, m = 1, and p = 20-200). The cyclodextrins are bound to the polymer backbone by a secondary amine, urethane, ester, or ether bonds, and they can encapsulate conventional explosives (e.g., RDX or HMX) to form desensitized explosives. Synthesis is preferably carried out using a supported water-swellable polystyrene-based resin.

IC ICM C06B025-02
ICS C08G063-91

NCL 149108000; 525054200; 525054300; 525054420; 525063000; 525066000; 524081000; 149088000; 149108600; 149108800

CC 50-2 (Propellants and Explosives)
Section cross-reference(s): 35, 38

IT Nitration
(in liquid carbon dioxide, of cyclodextrin **polymers**; **linear** tube-shaped nitrated cyclodextrin polymers for encapsulation of nitramine explosives)

IT 10102-03-1, Dinitrogen pentoxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(nitrating agent, for cyclodextrin **polymers**; **linear** tube-shaped nitrated cyclodextrin polymers for encapsulation of nitramine explosives)

IT **97227-33-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis and poly(allylamine) reaction with; in synthesis of linear tube-shaped nitrated cyclodextrin polymers for encapsulation of nitramine explosives)

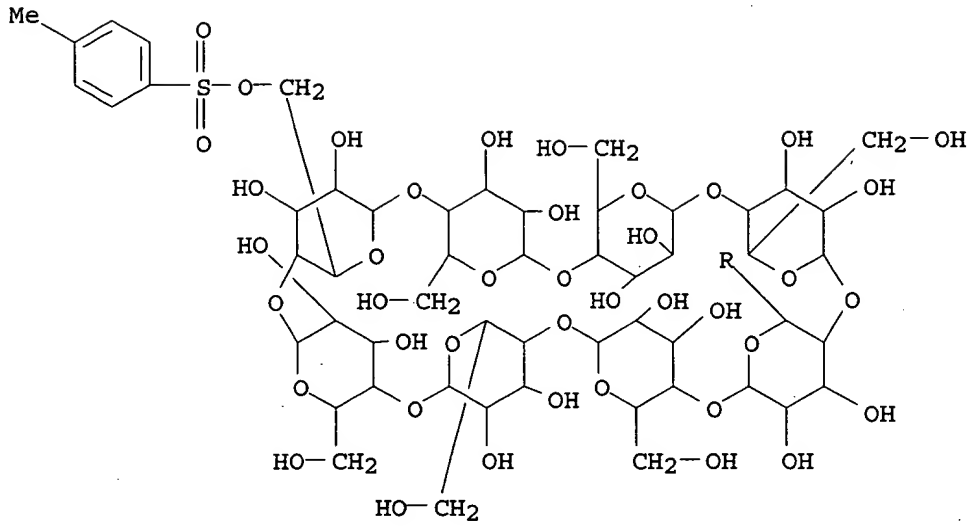
IT 25916-38-5DP, α-Cyclodextrin-epichlorohydrin copolymer, borohydride-reduced, nitrated 30551-89-4DP, Poly(allyl amine), compds. with 6-tolylsulfonyl-6-deoxy-2-cyclodextrin 97227-33-3DP, compds. with poly(allyl amine) 350811-56-2P, α-Cyclodextrin-epichlorohydrin **copolymer**, nitrate 500314-75-0P, Cyclodextrin-4,4'-MDI **copolymer**, nitrate
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(synthesis of **linear** tube-shaped nitrated cyclodextrin polymers for encapsulation of nitramine explosives)

IT **97227-33-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(synthesis and poly(allylamine) reaction with; in synthesis of linear tube-shaped nitrated cyclodextrin polymers for encapsulation of nitramine explosives)

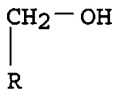
RN 97227-33-3 HCAPLUS

CN γ-Cyclodextrin, 6A-(4-methylbenzenesulfonate) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:401687 HCAPLUS
DOCUMENT NUMBER: 133:48948
TITLE: Supramolecular complexes containing therapeutic agents
INVENTOR(S): Davis, Mark E.; Gonzalez, Hector; Hwang, Suzie
PATENT ASSIGNEE(S): California Institute of Technology, USA
SOURCE: PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

Appl's own work

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000033885	A1	20000615	WO 1999-US28547	19991203
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1133318	A1	20010919	EP 1999-965967	19991203

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

JP 2002531530 T2 20020924 JP 2000-586375 19991203

PRIORITY APPLN. INFO.: US 1998-110847P P 19981204
US 1999-127856P P 19990405
WO 1999-US28547 W 19991203

AB A method of preparing a supramol. complex containing at least one therapeutic agent and a multi-dimensional polymer network is described. A supramol. complex prepared by a method of the invention is described. A method of treatment by administering a therapeutically effective amount of a supramol. complex of the invention is also described. Such a supramol. complex may be used as a delivery vehicle for various therapeutic agents. The **polymers** include **linear** or branched polyethyleneimine and cyclodextrin derivs.

IC ICM A61K047-48
ICS A61K031-335; A61K031-70

CC 63-6 (Pharmaceuticals)

IT 9002-98-6DP, Polyethylenimine, reaction product with β-cyclodextrinthiol and functionalized PEG 25322-68-3DP, PEG, reaction product with β-cyclodextrinthiol and polyethylenimine **29390-66-7P** 35625-91-3P 39927-08-7P 52539-19-2P **67217-55-4P** 73499-21-5P **76700-72-6P** **81644-55-5DP**, reaction product with functionalized PEG and polyethylenimine **81644-55-5P 98126-99-9P** **101652-40-8P 254912-03-3P 254912-04-4P** **254912-05-5DP**, oxidized **254912-05-5P** **254912-07-7P 254912-09-9P** 275354-50-2P **275354-52-4DP**, reaction products with DNA **275354-53-5P** **275354-54-6P 275354-55-7P 275354-57-9P** 275354-58-0P 275354-59-1P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of supramol. complexes containing therapeutic agents)

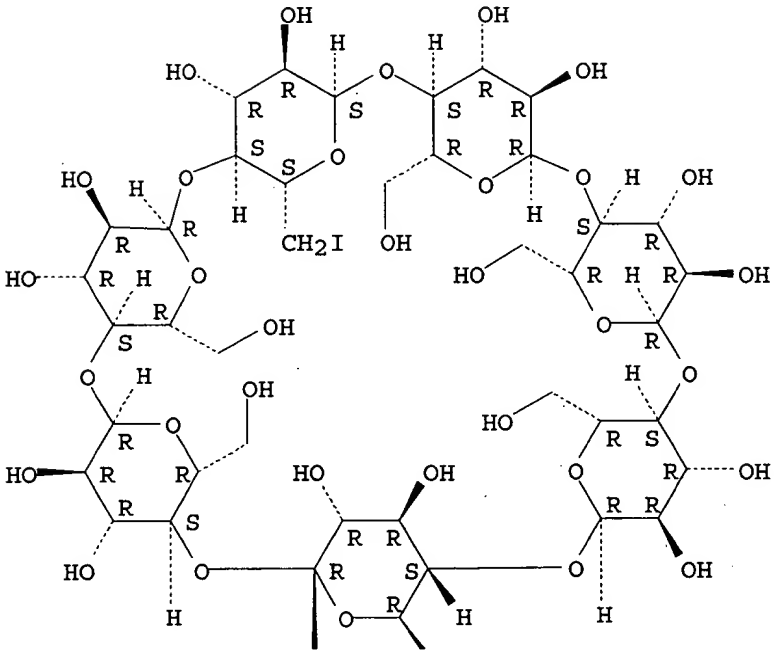
IT **29390-66-7P 67217-55-4P 76700-72-6P** **81644-55-5DP**, reaction product with functionalized PEG and polyethylenimine **81644-55-5P 98126-99-9P** **101652-40-8P 254912-03-3P 254912-04-4P** **254912-05-5DP**, oxidized **254912-05-5P** **254912-07-7P 254912-09-9P 275354-52-4DP**, reaction products with DNA **275354-53-5P 275354-54-6P** **275354-55-7P 275354-57-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation of supramol. complexes containing therapeutic agents)

RN 29390-66-7 HCAPLUS

CN β-Cyclodextrin, 6A-deoxy-6A-iodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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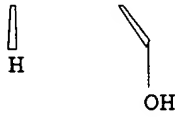
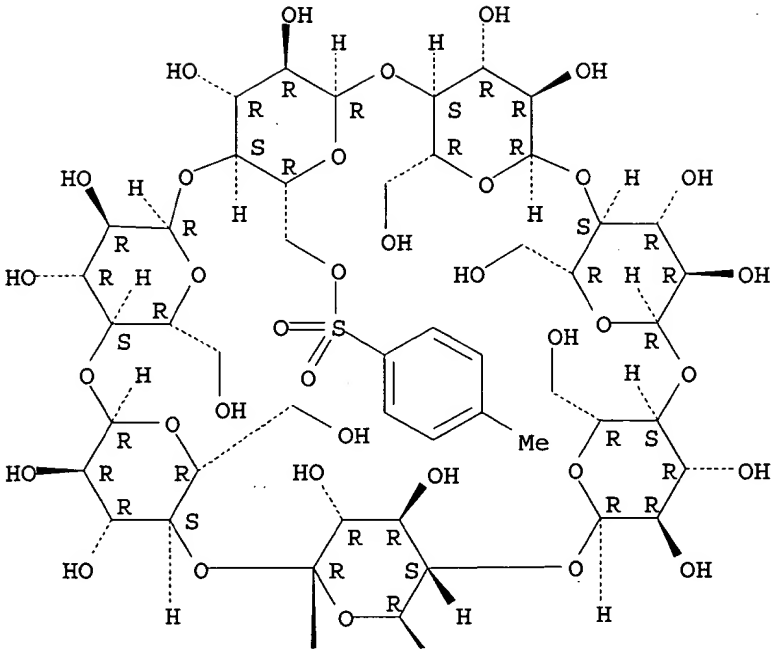


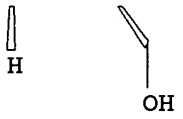
RN 67217-55-4 HCAPLUS
CN β-Cyclodextrin, 6A-(4-methylbenzenesulfonate) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

PAGE 1-A



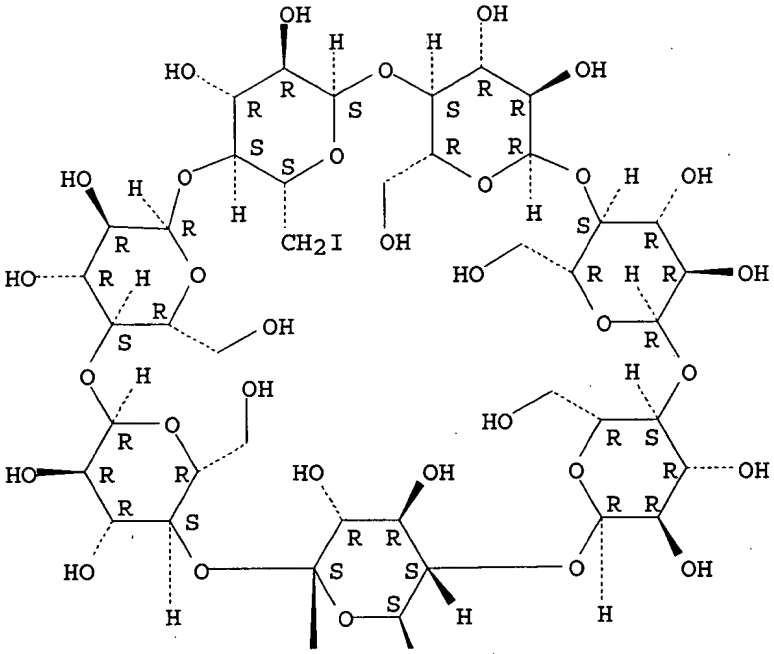
PAGE 2-A



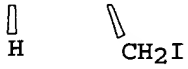
RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



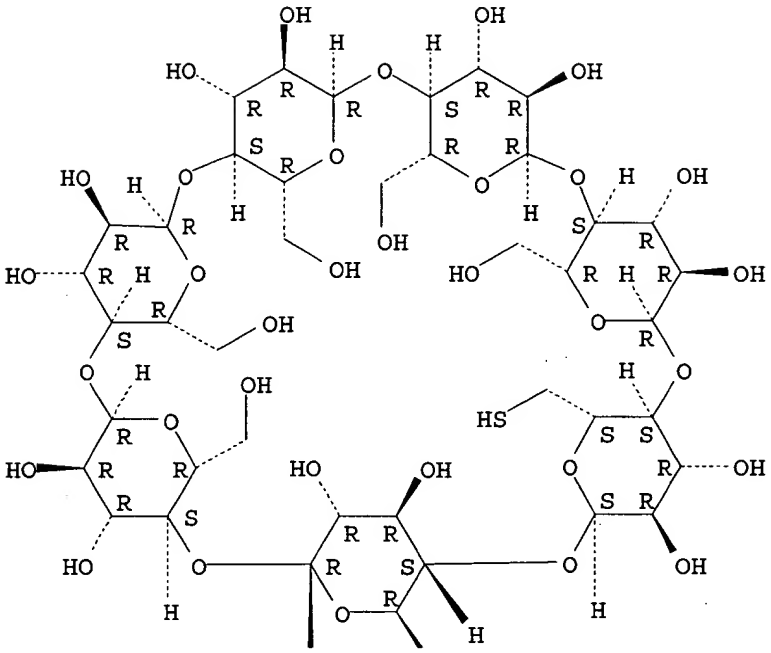
PAGE 2-A



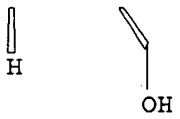
RN 81644-55-5 HCAPLUS
CN β-Cyclodextrin, 6A-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



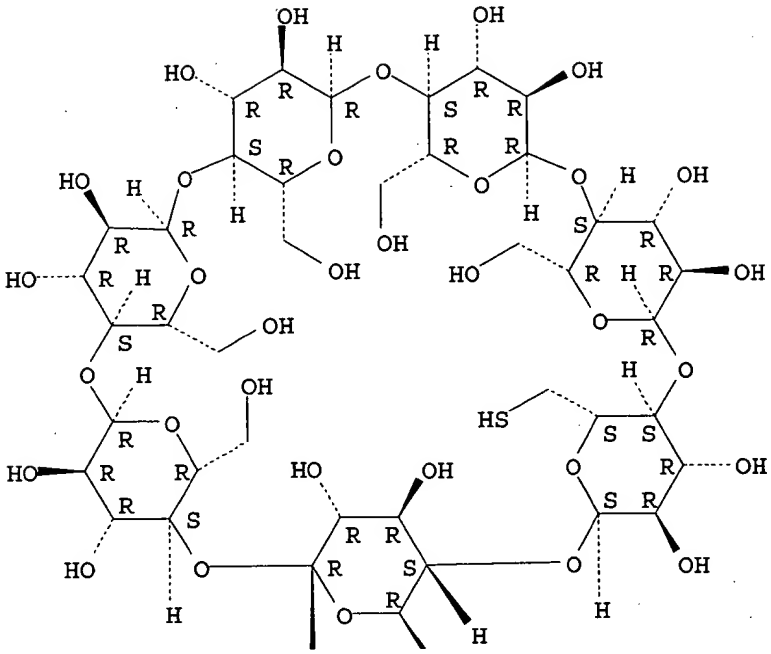
PAGE 2-A



RN 81644-55-5 HCAPLUS
CN β-Cyclodextrin, 6A-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

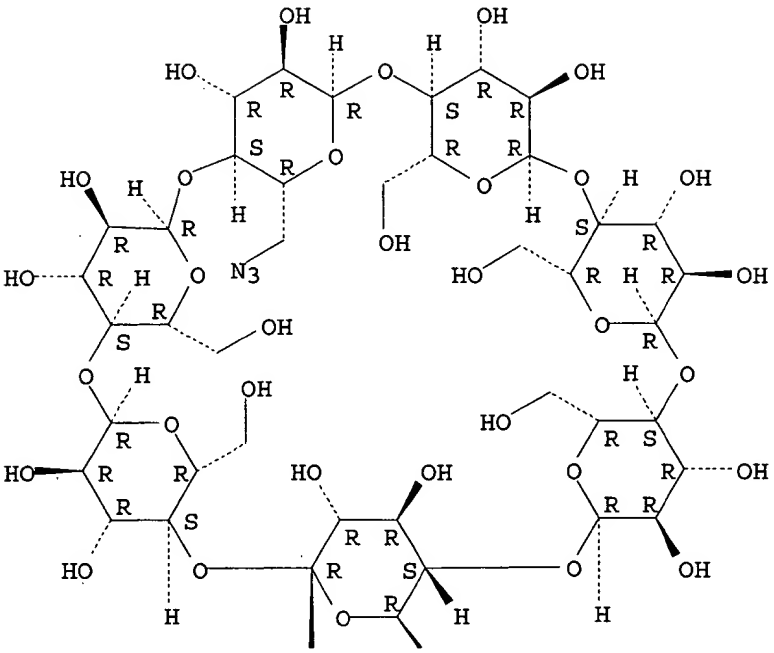


PAGE 2-A

RN 98126-99-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diazido-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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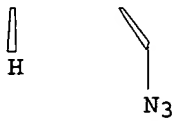
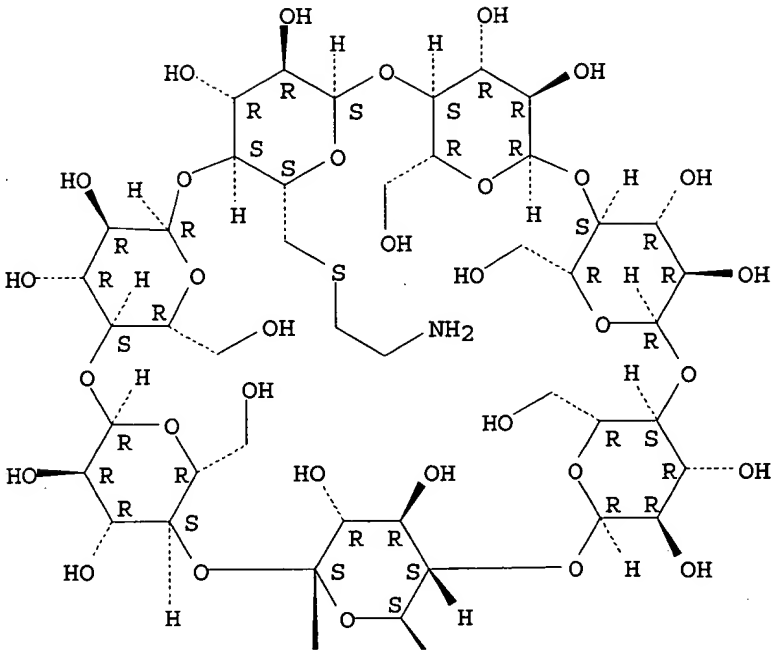


RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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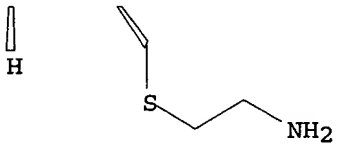


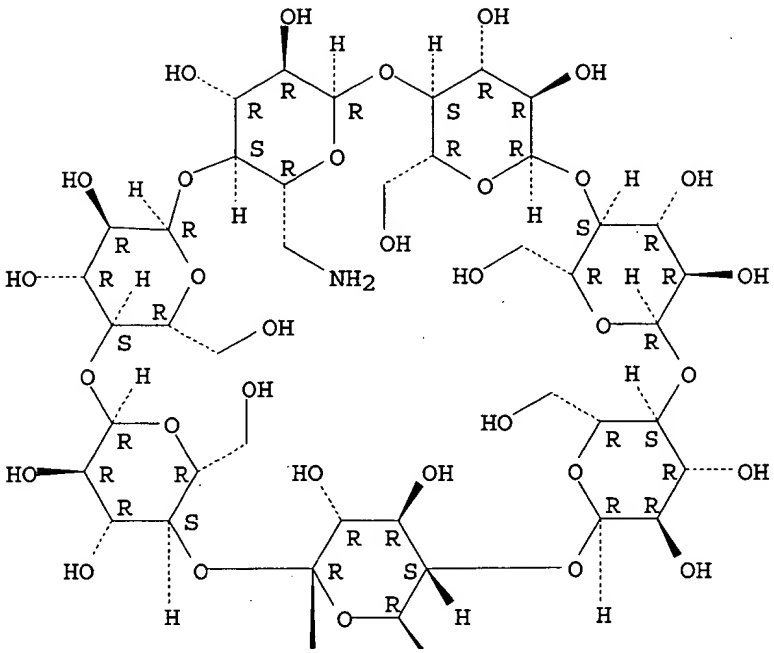
RN 254912-03-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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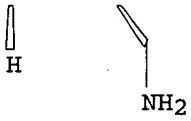
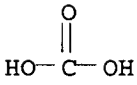


CM 2

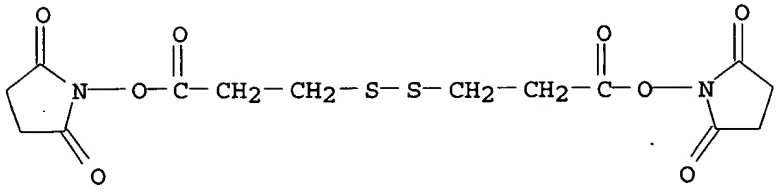
CRN 463-79-6
CMF C H2 O3



RN 254912-04-4 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[dithiobis[(1-oxo-3,1-propanediyl)oxy]]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

CM 1

CRN 57757-57-0
CMF C14 H16 N2 O8 S2



CM 2

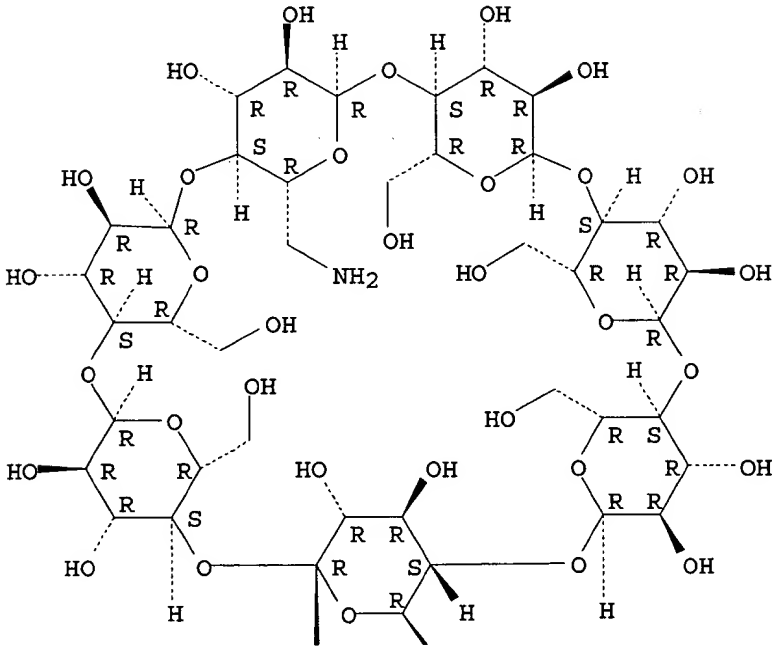
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

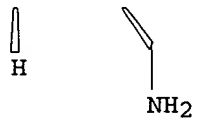
CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A

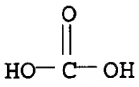


PAGE 2-A



CM 4

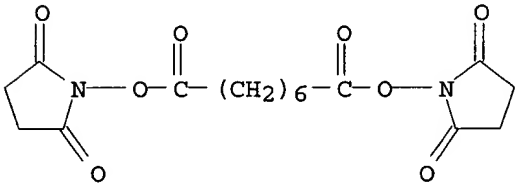
CRN 463-79-6
CMF C H2 O3



RN 254912-05-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[(1,8-dioxo-1,8-octanediyl)bis(oxy)]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

CM 1

CRN 68528-80-3
CMF C16 H20 N2 O8



CM 2

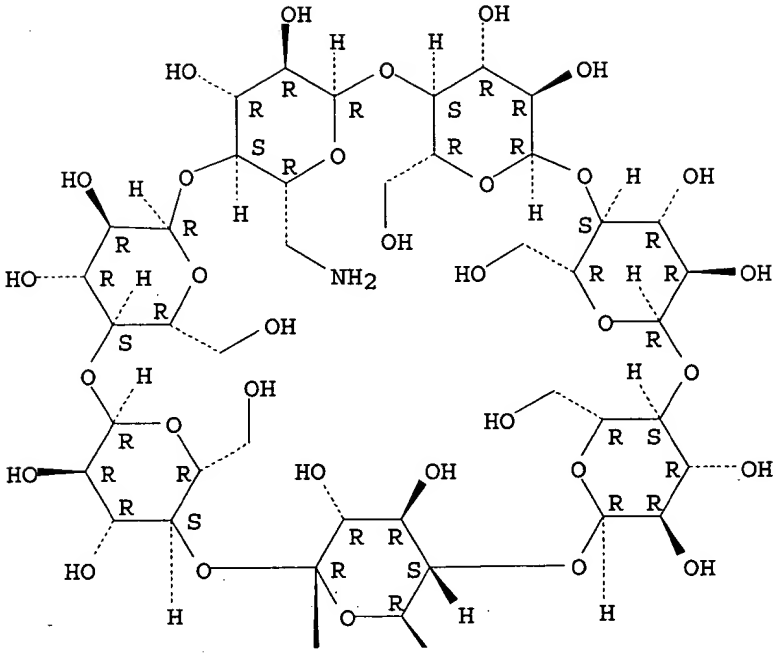
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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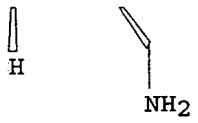
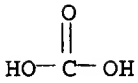


CM 4

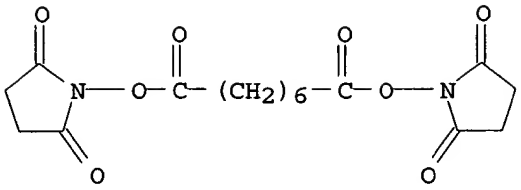
CRN 463-79-6
CMF C H2 O3



RN 254912-05-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with 1,1'-[(1,8-dioxo-1,8-octanediyl)bis(oxy)]bis[2,5-pyrrolidinedione] (9CI) (CA INDEX NAME)

CM 1

CRN 68528-80-3
CMF C16 H20 N2 O8



CM 2

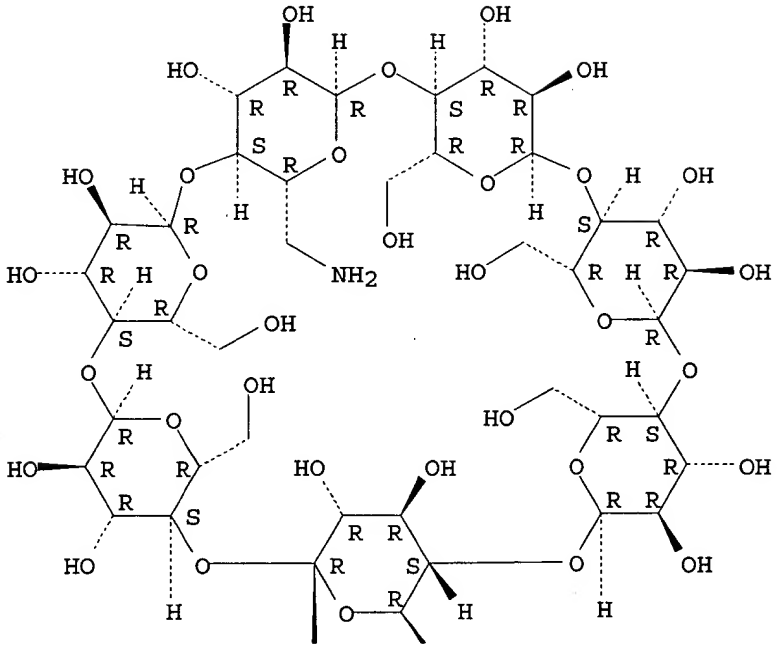
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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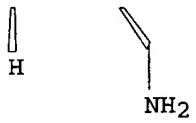
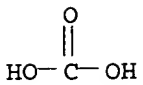


CM 4

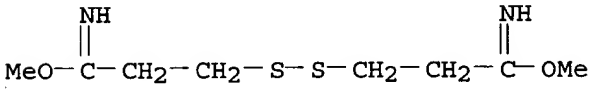
CRN 463-79-6
CMF C H2 O3

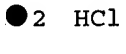


RN 254912-07-7 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with dimethyl 3,3'-dithiobis[propanimidate] dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 38285-78-8
CMF C8 H16 N2 O2 S2 . 2 Cl H





CM 2

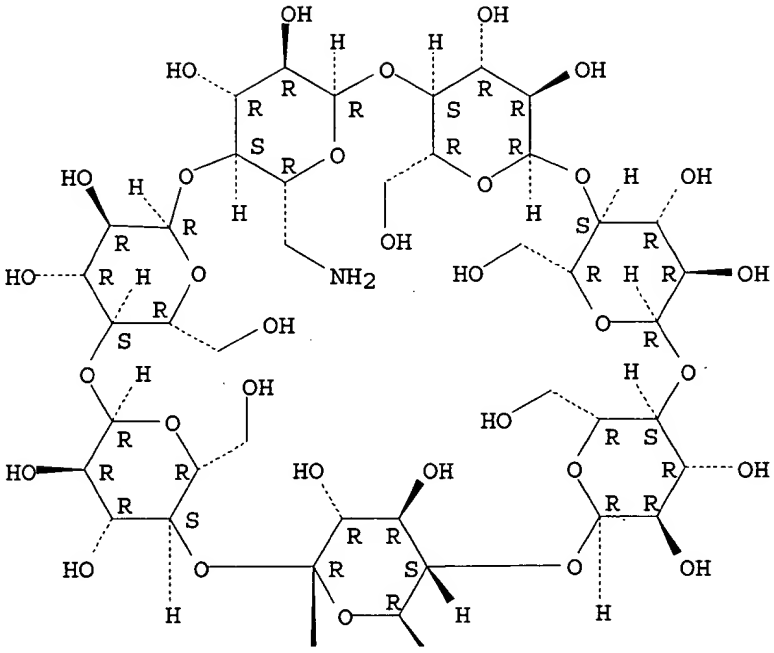
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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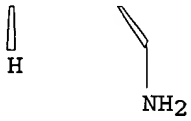
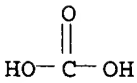


CM 4

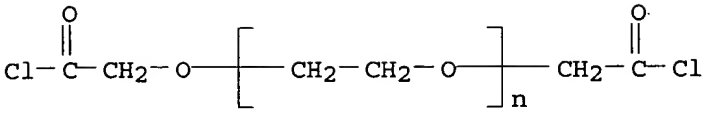
CRN 463-79-6
CMF C H2 O3



RN 254912-09-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2), polymer with α-(2-chloro-2-oxoethyl)-ω-(2-chloro-2-oxoethoxy)poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 35625-91-3
CMF (C2 H4 O)n C4 H4 Cl2 O3
CCI PMS



CM 2

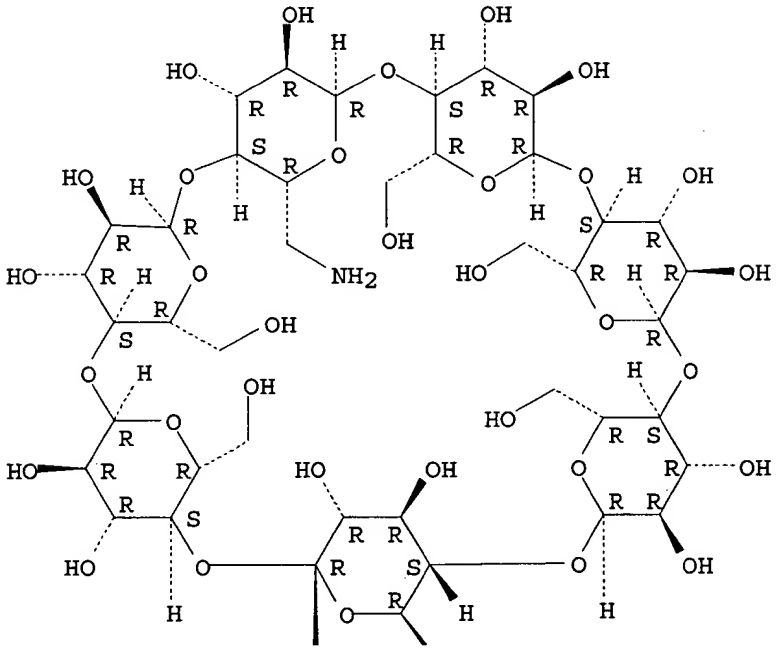
CRN 254912-03-3
CMF C42 H72 N2 O33 . 2 C H2 O3

CM 3

CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A



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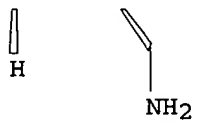
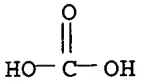


CM 4

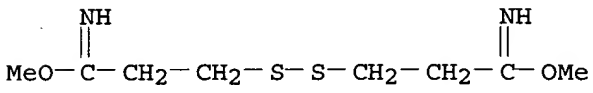
CRN 463-79-6
CMF C H2 O3



RN 275354-52-4 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl 3,3'-dithiobis[propanimidate] dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 38285-78-8
CMF C8 H16 N2 O2 S2 . 2 Cl H



CM 2

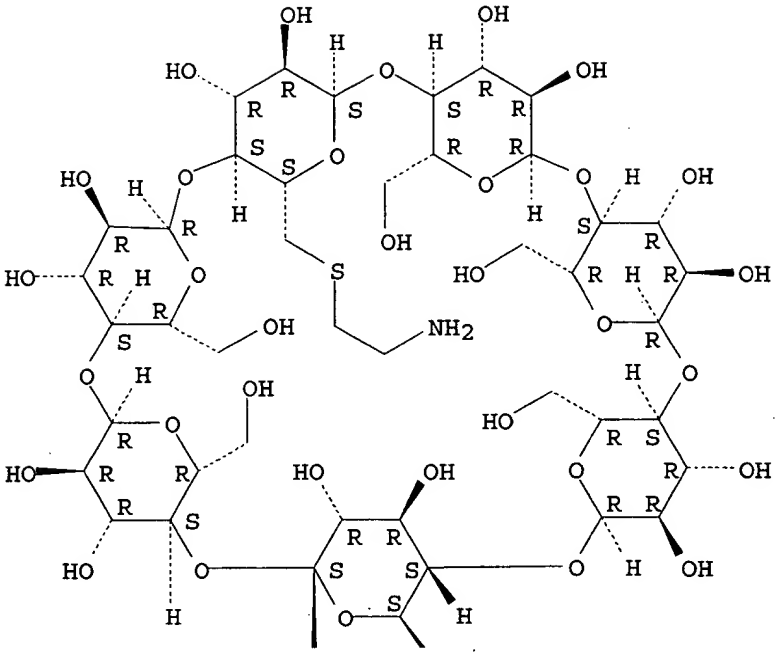
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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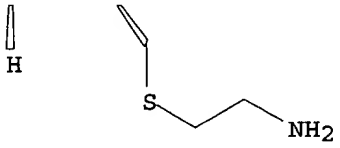
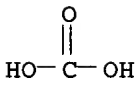


CM 4

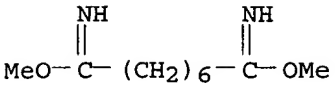
CRN 463-79-6
CMF C H2 O3



RN 275354-53-5 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl octanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 34490-86-3
CMF C10 H20 N2 O2 . 2 Cl H



●2 HCl

CM 2

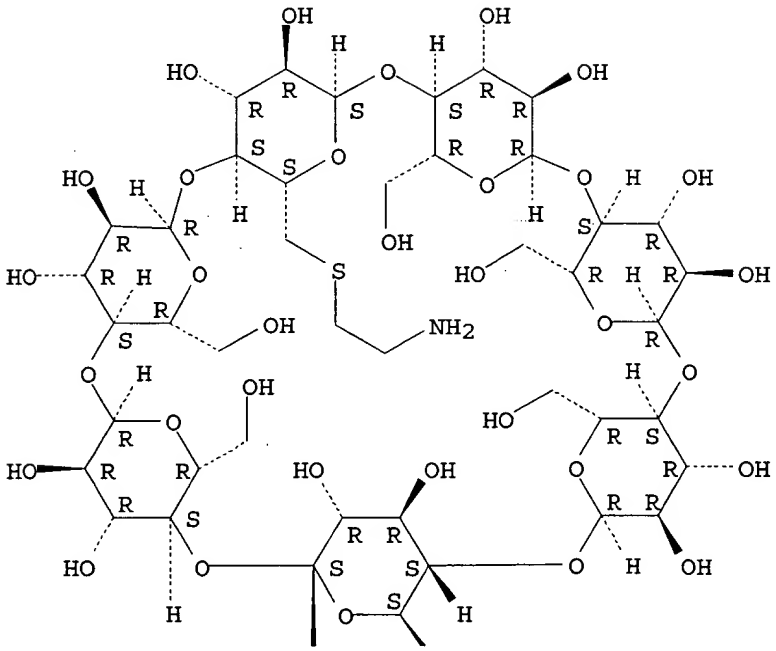
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

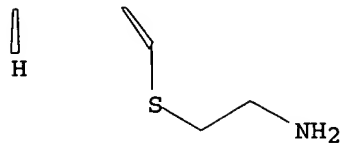
CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

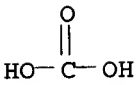
PAGE 1-A





CM 4

CRN 463-79-6
CMF C H2 O3



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CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl hexanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 14620-72-5
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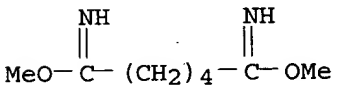


●2 HCl

CM 2

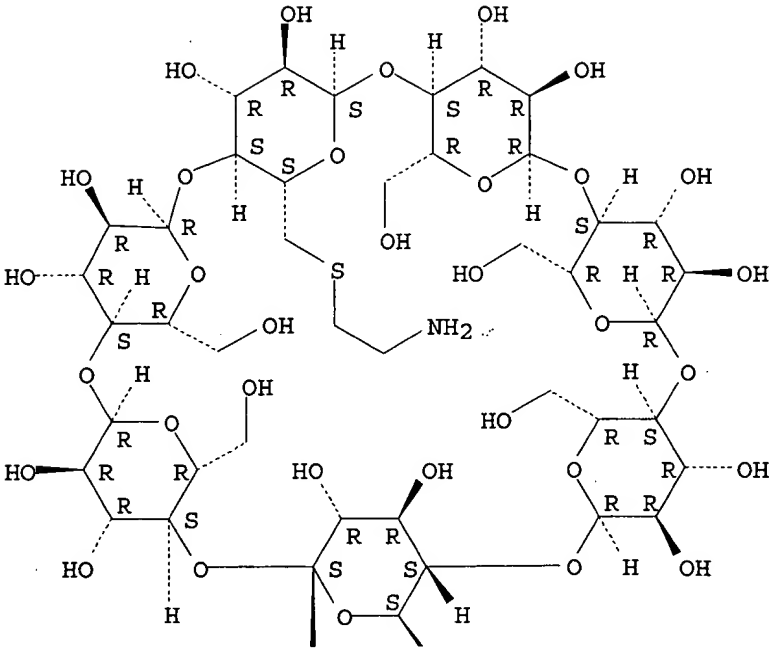
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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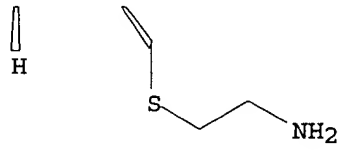
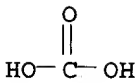


CM 4

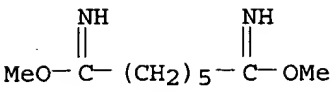
CRN 463-79-6
CMF C H2 O3



RN 275354-55-7 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, carbonate (1:2) (salt), polymer with dimethyl heptanediimidate dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 58537-94-3
CMF C9 H18 N2 O2 . 2 Cl H



●2 HCl

CM 2

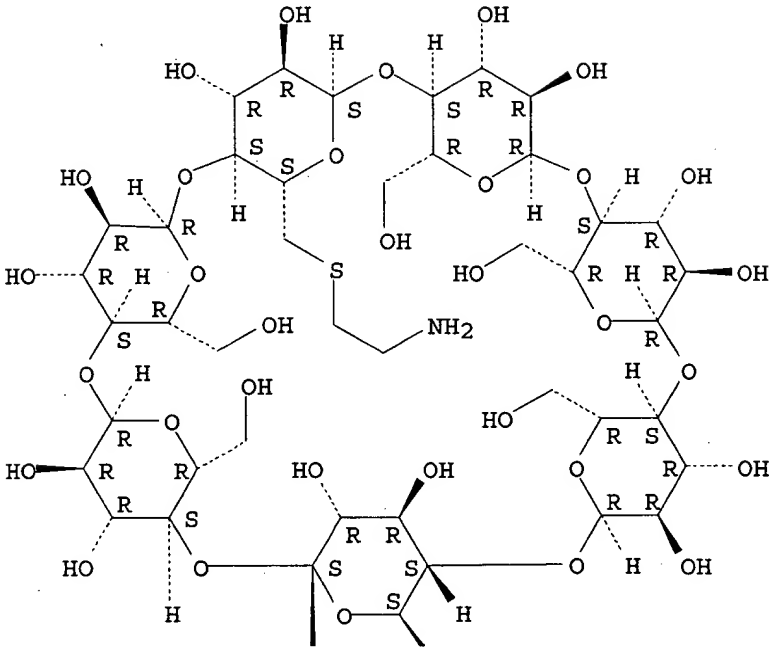
CRN 275354-51-3
CMF C46 H80 N2 O33 S2 . 2 C H2 O3

CM 3

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

PAGE 1-A



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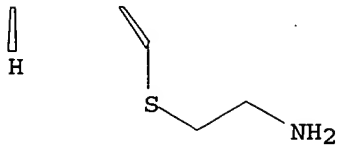
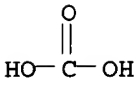


CM 4

CRN 463-79-6
CMF C H2 O3



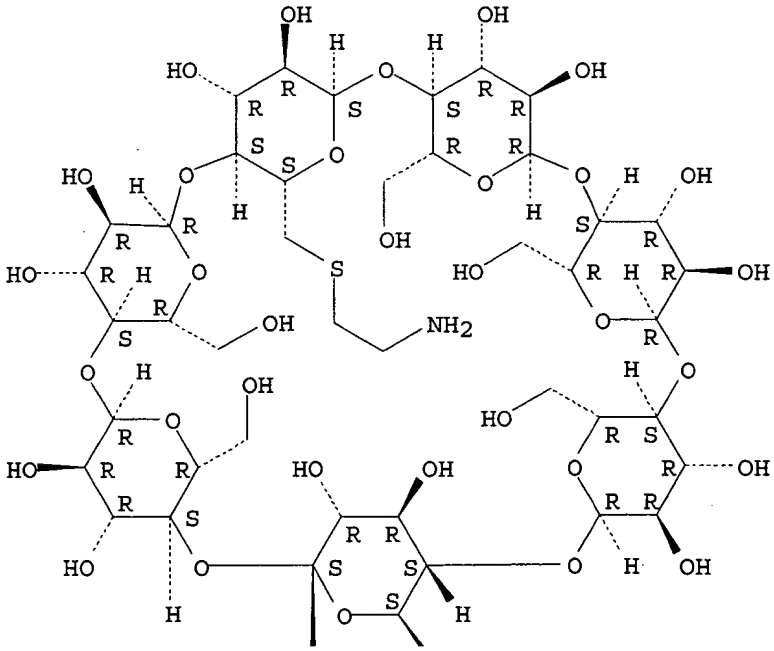
RN 275354-57-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio-, polymer with α-(chloroacetyl)-ω-[(chloroacetyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

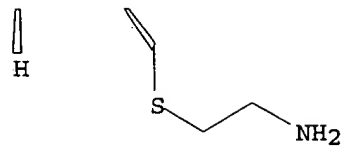
CM 1

CRN 101652-40-8
CMF C46 H80 N2 O33 S2

Absolute stereochemistry.

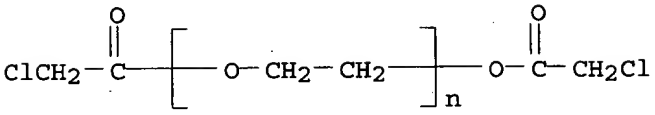
PAGE 1-A





CM 2

CRN 56867-89-1
CMF (C2 H4 O)n C4 H4 Cl2 O3
CCI PMS



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:34909 HCAPLUS
DOCUMENT NUMBER: 132:94914
TITLE: Preparation of **linear** cyclodextrin **copolymers**
INVENTOR(S): Gonzalez, Hector; Hwang, Suzie Sue Jean; Davis, Mark E.
PATENT ASSIGNEE(S): California Institute of Technology, USA
SOURCE: PCT Int. Appl., 84 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000001734	A1	20000113	WO 1999-US14298	19990625
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RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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EP 1093469 A1 20010425 EP 1999-931889 19990625
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PRIORITY APPLN. INFO.: US 1998-91550P P 19980701
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US 1999-339818 A3 19990625
WO 1999-US14298 W 19990625

AB **Linear** cyclodextrin **copolymers** containing an unoxidized and/or an oxidized cyclodextrin moiety integrated into the polymer backbone, useful as drug delivery vehicles, were prepared For example, substitution reaction of 6A,6D-diiodo-6A,6D-deoxy-β-cyclodextrin (2-step preparation by a known procedure given) with NaSCH2CH2NH2 gave 79% 6A,6D-bis(2-aminoethylthio)-6A6D-deoxy-β-cyclodextrin. This was stirred for 18 h at 80° in DMF under N with an equiv of MeOC(:NH)(CH2)6C(:NH)OMe-2HCl in the presence of Et3N to give 18% of a title copolymer (CD copolymer). Media containing doxorubicin and CD copolymer-doxorubicin complex (general complexation procedure given) were applied to cultured cell lines to show no toxicity to KB or KB-VI cell lines in the absence of doxorubicin.

IC ICM C08B037-16
ICS C08G081-00; C08G069-00; C08G069-40; C08G073-02; C08G073-06; C08G075-00; A61K047-40

CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 63

ST cyclodextrin **linear copolymer** prepn drug delivery; iododeoxycyclodextrin prepn substitution aminoethylthiocyclodextrin; aminoethylthiocyclodextrin prepn polymn dimethylsuberimidate; doxorubicin complex aminoethylthiocyclodextrin dimethylsuberimidate copolymer cell toxicity

IT Drug delivery systems
(preparation of **linear** cyclodextrin **copolymers** as)

IT 51178-68-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid chlorination; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT 91190-86-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and conversion to diodo derivative; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT 35625-91-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and copolymn. with diaminocyclodextrin; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT **101652-40-8P 254912-03-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and **copolymn.**; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT **98126-99-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and redn to diamine; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT **76700-72-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and substitution with sodium azide; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT 23214-92-8DP, Doxorubicin, complexes with cyclodextrin **copolymers**
RL: BSU (Biological study, unclassified); PNU (Preparation, unclassified); BIOL (Biological study); PREP (Preparation)
(preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT 254912-04-4P 254912-05-5DP, oxidized 254912-05-5P 254912-07-7P
254912-08-8P 254912-09-9P 254912-10-2P 254912-11-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT 7585-39-9, β-Cyclodextrin
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with biphenyldisulfonyl dichloride; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT 3406-84-6, Biphenyl-4,4'-disulfonyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with β-cyclodextrin; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

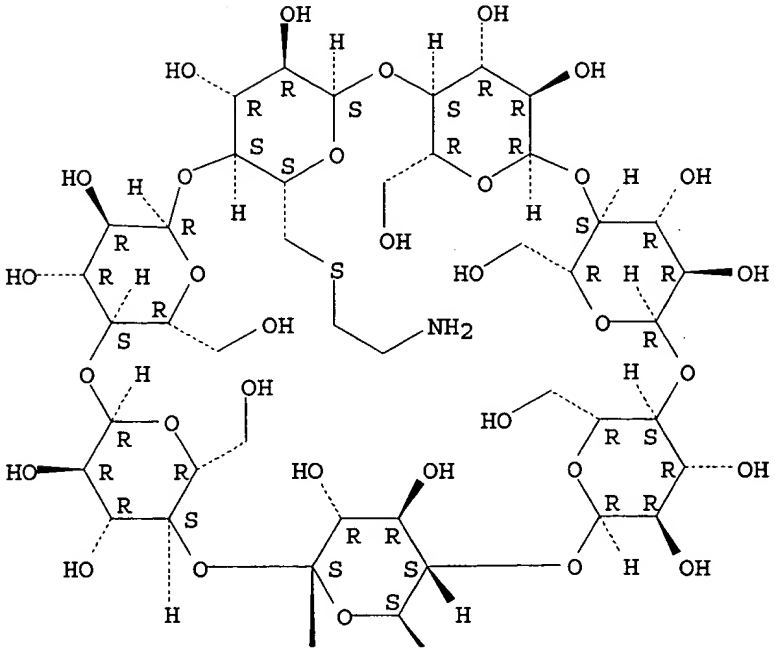
IT 51974-68-6, Sodium 2-aminoethylthiolate
RL: RCT (Reactant); RACT (Reactant or reagent)
(thioetherification of diiodocyclodextrin; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

IT **101652-40-8P 254912-03-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and **copolymn.**; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)

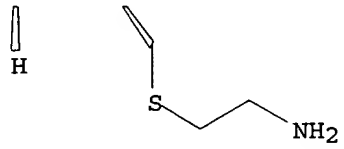
RN 101652-40-8 HCAPLUS
CN β-Cyclodextrin, 6A,6D-bis-S-(2-aminoethyl)-6A,6D-dithio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



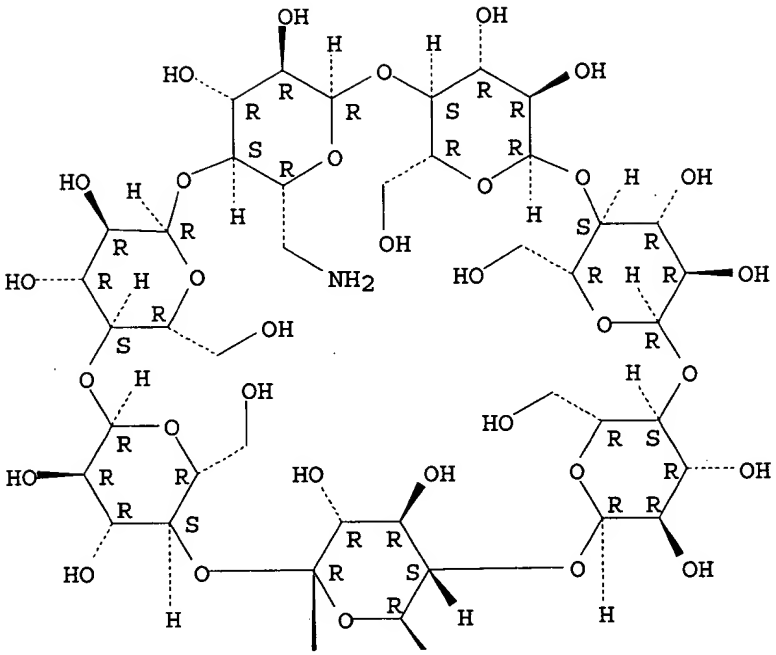
RN 254912-03-3 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diamino-6A,6D-dideoxy-, carbonate (1:2) (9CI) (CA INDEX NAME)

CM 1

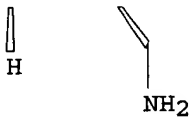
CRN 162825-08-3
CMF C42 H72 N2 O33

Absolute stereochemistry.

PAGE 1-A

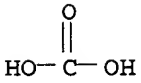


PAGE 2-A



CM 2

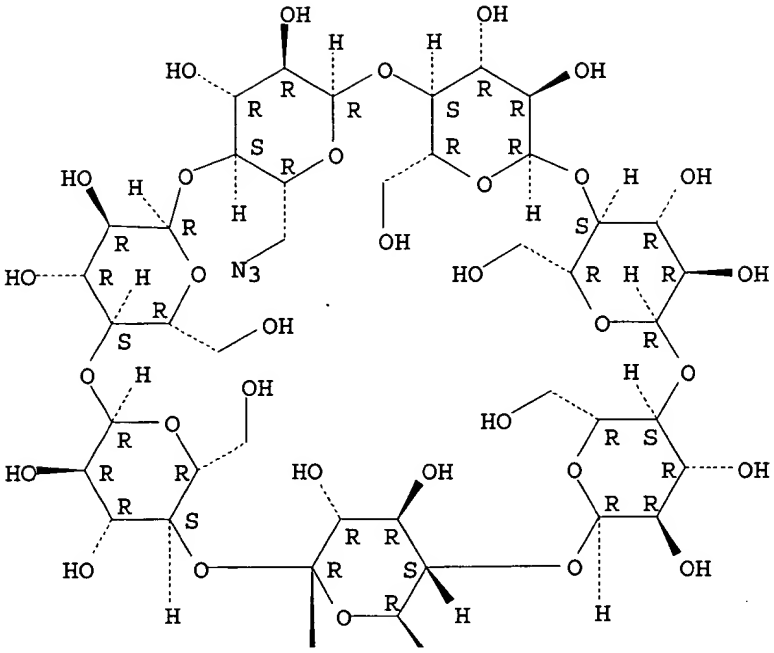
CRN 463-79-6
CMF C H2 O3



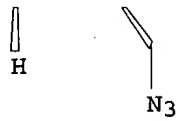
IT **98126-99-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and redn to diamine; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)
RN 98126-99-9 HCAPLUS
CN β-Cyclodextrin, 6A,6D-diazido-6A,6D-dideoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



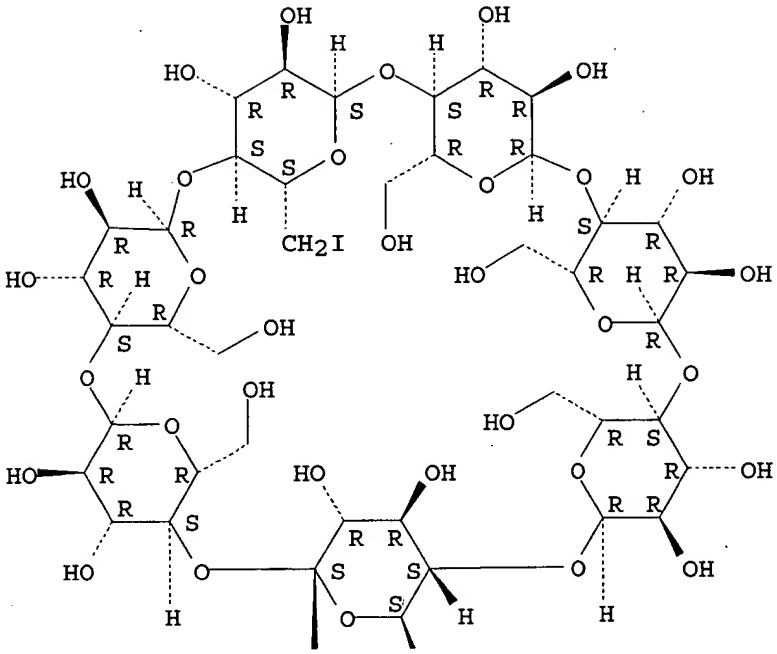
PAGE 2-A



IT **76700-72-6P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); **RACT (Reactant or reagent)**
(preparation and substitution with sodium azide; preparation of **linear** cyclodextrin **copolymers** as drug delivery agents)
RN 76700-72-6 HCAPLUS
CN β-Cyclodextrin, 6A,6D-dideoxy-6A,6D-diiodo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

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